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ENVIRONMENTAL QUALITY

No. 335

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28 January 1982

WORLDWIDE REPORT ENVIRONMENTAL QUALITY

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WORLDWIDE AFFAIRS

BRITISH PLEDGE TO TRY TO HALT ACID RAINS ON NORDIC COUNTRIES

Stockholm DAGENS NYHETER in Swedish 10 Dec 81 p 6

[Article by Magdalena Ribbing]

[Text] The acidification of Swedish lakes will cease. Agriculture Minister Anders Dahlgren (Center Party) returned home with this promise from London where he held discussions with his British counterpart as part of Anders Dahlgren's pressure campaign. Its purpose is to prevent 33 nations from emitting sulfur-containing wastes unpurified, which affects Sweden and Norway especially.

What British Environmental Minister Tom King promised Anders Dahlgren was that England would sign the Geneva convention of 1979. According to it the nations obligate themselves to purify their sulfur-containing emissions and to use the latest technology. So far only nine nations have signed, but Anders Dahlgren now has found out that the EC intends to sign early in 1982 and England will go along with the EC. As soon as 24 of the 33 nations have signed the convention it will become valid.

"Of course, this does not mean that it will become clean immediately," Anders Dahlgren said, "but at least it will not become worse."

The trip to England was one in a series of journeys undertaken by Anders Dahlgren this year to put pressure on various governments. He has been in the Soviet Union, Czechoslovakia, the United States, Canada, and elsewhere to speak against sulfur emissions and for solidarity across boundaries. Sweden has decreased its sulfur emissions from 800,000 tons to half that figure in 10 years and 75 percent of the sulfur fallout in this country comes from abroad.

Today 20,000 lakes in Sweden are without life. If sulfur emissions which cause the soil and water to be acidic rather than basic are stopped, the lakes can be "revived" to life again--many years from now. If they are not stopped additional lakes will die and forests will not grow.

In England it is believed that the increasing number of nuclear power plants in that country are making the air cleaner and that the high stacks at factories send dangerous waste outside the country. They agree, however, that destruction should be prevented in other countries and they will sign the convention. It will prevent the quantity of sulfur emissions from increasing. In new and rebuilt plants new technology will be used to purify the waste.

The westerly winds cause Sweden to be affected by sulfur emissions from other countries. Next year Anders Dahlgren will travel to France and Switzerland to exert pressure there, as well, but he is satisfied with the results of his trips to date:

"It has been hard and tedious work, but it works. If you sit down and talk with someone they will recognize the problem. The groundwork has now been laid for keeping the acidification from becoming worse and I hope that the politicians at the Stockholm meeting this summer will agree that it must not become worse than it is now. It must become better.

The Stockholm meeting is an environmental protection conference that will take place the week after midsummer. The invited countries have shown great interest in it, according to Anders Dahlgren.

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CSO: 5000/2034

INDUSTRIAL, COMMERCIAL SOURCES BEHIND SYDNEY AIR POLLUTION

Sydney THE SYDNEY MORNING HERALD in English 5 Nov 81 p 2

[Article by Joseph Glascott: "Industry Blamed for Haze Pollution"]

[Text] Industrial and commercial sources have been blamed for much of Sydney's unsightly brown haze air pollution--a distinctive feature of the City on winter mornings.

The Minister for Planning and Environment, Mr Bedford, said yesterday that inefficient combustion on industrial and commercial premises appeared to be the major single cause of the haze.

He said the State Pollution Control Commission was launching a program to reduce emissions from these sources and other contributors, such as motor vehicles.

The CSIRO, with funds provided by the commission, has been studying Sydney's brown haze.

The haze is distinct from photochemical smog, Sydney, after Los Angeles and Tokyo, has the worst photo chemical smog recordings in the world.

The CSIRO research shows the haze is widespread over Sydney and often extends many kilometres to sea. It is composed mainly of carbon, sulphate, sodium, nitrate and chloride.

The CSIRO found that sources were motor vehicles, 17 percent and 20 percent in the morning peak period, sea salt 17 percent, backyard burning and bushfires 10 percent, and soil and cement dust 5 percent.

The remaining 52 percent of the haze was attributed to industrial process-heating and refuse-incinerator sources.

A commission said yesterday that the effects of the haze were still being investigated.

Health effects from air pollution were established but little was known about Sydney's brown haze pollution.

The commission says in its annual report tabled in State Parliament last week, that it was giving much attention to controlling brown haze emissions.

"Much can be done to improve diesel-vehicle and industrial combustion without particularly expensive control measures," the report said.

"Attention to detail often makes all the difference between dirty or sooty burning.

"Attention by industry to the quality of its combustion operations in advance of a visit by a commission inspector will not only contribute to cleaner air, but will often lead to immediate improvements in fuel consumption and costs."

Mr Bedford said that 10 years ago the commission's main task was to correct the mistakes of inadequate environmental planning in the past.

"The major task today is to ensure that such environmental mistakes are not repeated in the future," he said.

CSO: 5000/7513

QUEENSLAND ASSERTS CONTROL OVER REEF-EDGE COASTAL STRIP

Dispute With Canberra

Perth THE WEST AUSTRALIAN in English 10 Nov 81 p 9

[Text]

BRISBANE: Queensland has asserted sole control over a strip extending 5km out to sea on the western edge of the proposed Great Barrier Reef marine park.

The State Government said yesterday that the issue was not negotiable. The Prime Minister, Mr Fraser, has said that he wants a protected zone from the low water mark, controlled by the Great Barrier Reef Marine Park Authority, along the entire reef.

The Queensland Premier, Mr Bjelke-Petersen, speaking after his Cabinet had decided on the 5km zone, said he was confident that Mr Fraser would agree to Queensland's demand. He will discuss the issue with Mr Fraser in Canberra on Thursday.

Queensland coastline to a non-elected, Canberra-based statutory authority," he said.

"Mr Casey (the Opposition leader) has surrendered to centralism."

Mr Bjelke-Petersen said that the Queensland Government did not want the authority to have full control up to the shoreline because "we can look after it better."

The Premier added: "My Government, while supporting the creation of marine parks, is absolutely determined to ensure that these decisions remain the responsibility of this State."

"The Prime Minister will recognise the fairness of what we plan to do and I am sure he will adopt a practical attitude."

DENIAL
Mr Bjelke-Petersen denied that he or his family were shareholders in a company with authority to prospect in an area of the proposed marine park.

'NO MINING'
Mr Bjelke-Petersen asserted that he was not interested in mining in the zone Queensland wanted to control.

He said: "There are areas where you could mine, but that's not our intention."

"There's no reef in the area we are seeking and it's not a matter of considering mining."

He said that there were applications for authorities to prospect in the zone, but "where it doesn't disturb the reef."

He accused the Opposition of selling out Queensland by supporting the Great Barrier Reef Marine Park Authority.

"The Australian Labor Party is willing to hand over control of the

ALP Disagreement

Perth THE WEST AUSTRALIAN in English 9 Nov 81 p 12

[Text]

BRISBANE: The ALP's Queensland Council meeting yesterday called on the Federal and State Governments to declare the entire Great Barrier Reef region a marine park up to the mainland low-water mark.

Moving the resolution, the State Opposition Leader, Mr Casey, said that the Premier, Mr Bjelke-Petersen, continued to show his ignorance of the reef environment.

The Premier had insisted that a mythical line—some distance offshore—be set down as the western boundary of the park.

But Mr Casey said that the imaginary boundary would not be any barrier to pollution, and that to exclude inshore waters, reefs and surrounding islands from the park would make them vul-

nerable to oil drilling. The inshore waters, reefs and surrounding islands were an integral part of the reef ecosystem.

The Great Barrier Reef Marine Park Act provided for a wide range of activities except mining and drilling.

The Prime Minister, Mr Fraser, had confirmed that the reef was not yet safe from oil explorers.

Mr Casey asserted that Mr Bjelke-Petersen wanted the offshore strip excluded from the marine park so that it could be available for mining and drilling exploitation.

CSO: 5000/7513

NATIONAL PLAN TO DEVELOP WATER RESOURCES TOLD

Bombay THE TIMES OF INDIA in English 13 Dec 81 p 6

[Text]

ROORKEE, December 12: The Centre has formulated a long-term national plan for water resources development, according to Dr. M. S. Swaminathan, member of the planning commission.

Inaugurating an international symposium on water pollution and conservation of water resources, Dr. Swaminathan said yesterday that a national water development agency comprising water resources experts, scientists and engineers would be set up to execute the plan. An extensive survey of water resources in various parts of the country, to be undertaken at an estimated cost of Rs. 197 crores, was expected to be completed in about ten years.

Over 200 delegates are attending the three-day symposium, organised by the civil engineering department of Roorkee University.

Dr. Swaminathan stated that under the water resources development plan, a total of 15 million hectares would be given irrigation facilities.

Delivering the first A. N. Khotla lecture on "Irrigation and agricultural future," Dr. Swaminathan said the basic task was to provide safe drinking water to the people in 2.3 lakh villages, which lacked even a single source of safe drinking water. Adequate attention must be paid to water requirements in drought-prone areas to prevent migration of people and cattle because of shortage of water and fodder.

Tapping both surface and underground water resources and making effective arrangements for storage of water and use of rain water should be the main objectives of the water resources development system.

Normal crop yields could be achieved even in drought-prone areas if adequate power supply was given for irrigation. Efforts should be made to develop an integrated energy supply system in various development blocks.

STUDY REVEALS POLLUTION THREAT TO GANGES WATER

Calcutta THE STATESMAN in English 30 Dec 81 p 9

[Text] NEW DELHI, Dec. 29.—The Central Board for Prevention and Control of Water Pollution has warned that the future of the Ganga will be severely jeopardised "if suitable pollution control policies are not speedily evolved and implemented".

The board's study has revealed that long stretches of the Ganga near Kanpur and Varanasi are fit only for navigation. The board has been monitoring the quality of the river water at 30 points in seven States since 1979. Its final report is expected in 1982 but it has made known some of its preliminary conclusions.

The board observes that the worst culprit for the degeneration of water quality in the Ganga during its flow along large towns and metropolitan centres is usually the sillage and other wastes poured into the river by the so-called storm-water drains or surface drains from different parts of the city. It is not unusual to see a large drain carrying significantly large loads of domestic wastes joining the river right at the upstream end of the city reach of the river. "Such a situation steeply raises the coliform counts of the river and hence the danger of pathogens and of enteric diseases and also lowers the DO (dissolved oxygen) in the water making it unhealthy. The share of industries in the total pollution loads is small but not insignificant for Allahabad. It is around 4%, for Varanasi around 5% and for Kanpur around 18% of the total organic load discharged from the respective towns", according to the board.

None of the large cities on the banks of the Ganga has a sewage treatment plant although they do have a partial sewerage system. The sewage collected is often used for sewage farming after 1:1 dilution with fresh water pumped from the Ganga.

The board's conclusion is that

the mere size and the consequent self-purification and pollution-assimilation capacities available in the Ganga have helped it to maintain a relatively clear look and satisfactory water quality along with most of its length so far. But now the natural defences have been breaking down and urgent steps to halt the degradation are called for, the board adds.

AGRICULTURE MINISTRY PUBLISHES ORDERS ON ENVIRONMENTAL PROTECTION

Vientiane BULLETIN QUOTIDIEN in French 9 Dec 81 pp 1-3

[Orders from the Ministry of Agriculture, Forestry, and Irrigation dated 5 December 1981 regarding protection of the environment]

[Text] Vientiane (KPL)--With a view to protecting woodlands and forests, fauna and flora, the environment, and natural resources, the Ministry of Agriculture, Forestry, and Irrigation has issued orders to the permanent committees for provincial administration in all the provinces, the ministries, and equivalent organizations, including state enterprises, fishing cooperatives, and military units throughout the country.

Pursuant to Instruction No 24/PM dated 2 February 1981 by the Council of Ministers on the protection of forests:

The Ministry of Agriculture, Forestry, and Irrigation has ordered the following:

1. It is forbidden to burn forests under any pretext--burning forests to flush out game, burning trash, or building a campfire to warm oneself (when cooking is done in the forest, the fire must be completely extinguished). It is also forbidden to discard cigarette butts that are not completely extinguished, and so on, in areas covered by dead leaves or dry grass in the forests. When a forest fire breaks out, the regional administration must be aware of it and punish the offenders without delay while also organizing efficiently to put out the fire.
2. It is forbidden to weed a "rai" [a reference to slash-and-burn farming] or field on bare mountaintops, to weed in such a way as to obstruct a spring or block both banks of a stream, and to weed along the edge of roads where the grade is too steep, along water reservoirs, or in areas surrounding hydroelectric dams, on the banks of ricefields contiguous to villages or districts, or in forest reserves. The objective is to protect the forests, prevent erosion and landslides, and keep oneself out of danger.
3. Where it is necessary to weed rai or fields located on mountaintops that are not too steep, in forests where conditions do not exist for economic development, and so on, or where the harmful consequences are very negligible on both banks of streams, in the bed of springs, or on the banks of ricefields, a distance of at least 40 to 50 meters must be maintained in order to retain the ambient moisture needed by the

plants and combat erosion and landslides. As far as roads are concerned, a border of from 30 to 40 meters must be maintained. In areas surrounding hydroelectric dams, water reservoirs, and mountaintops, the ban is absolute.

4. It is forbidden to weed rai or fields in reforesting zones or to set fires there.

5. The provinces, ministries, equivalent organizations, and the various departments must insure that hunting is done in strict compliance with the laws in effect. This applies particularly to the ban on shooting female animals in gestation, those that have just borne their young, and all female animals during the breeding season.

6. It is forbidden to hunt certain animals during their breeding season: these are the elephant, the rhinoceros, the gaur, the bull, deer, the tiger, the lion, the hornbill, the peacock, and the pheasant. The reason is that those animals are extremely scarce in our country.

7. It is absolutely forbidden to poison fish by any means: whether through the use of plant-based poisons, grenades, detonators, or firearms, since doing so interferes with the collective interest and with the living conditions of our multinational peoples who live from fishing and also endangers the national resources.

8. Each province must be zealous in educating the inhabitants and forming their ideology, even outside the rural areas, so that ricegrowing will be practiced as the crucial activity. One must not live professionally from the rai (and leave the ricefields lying fallow). On the contrary, the principle of forest protection means that we must refrain from exploiting virgin forests, since that would harm an invaluable resource of the nation.

9. Before starting to burn rai or fields, care must be taken to sweep and clean up the area surrounding the rai or field to prevent the fire from getting out of control outside the area to be burned.

Remarks: Offenders will be punished and sentenced by the administrative authority concerned in accordance with the seriousness of their offense and the law in effect.

Vientiane, 5 December 1981

Khamphet Phommavan,

for the minister of agriculture, forestry, and irrigation.

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CSO: 5000/4507

DANGEROUS PESTICIDES WIDELY USED IN AGRICULTURE

Kuala Lumpur NEW STRAITS TIMES in English 2 Dec 81 p 16

[Article by Nora Marzuki]

[Excerpts]

DANGEROUS pesticides are being dumped in Malaysia. A report on *Pesticide Problems in a Developing Country* by Sahabat Alam Malaysia (SAM) lists pesticides which have been banned overseas because of their ill effects but are available here.

In Malaysia, there were at least 68 cases of pesticide poisoning in 1972. The number increased to 71 in 1975.

Within a one-week period in June in 1979, more than 30 farmers were admitted to the General Hospital in Alor Star for suspected pesticide poisoning. One died.

In a survey, 43 per cent of Malaysian farmers who had used pesticides complained that they experienced some form of illness, such as drowsiness, headaches, skin irritations, breathing difficulties and vomiting, after applying the chemicals.

Pesticides usually enter the body through ingestion, inhalation of the fumes and vapours, through open wounds and cuts and also penetration of the skin.

Concentrates of the

chemicals also cause burns and inflammation of the skin and, if splashed on to the eyes, may cause severe damage to sight.

The Pesticides Act of 1974 regulates the sales, import, manufacture and storage of pesticides. However, it has never been fully enforced and remains a mere piece of paper.

DDT is banned or restricted in a large number of countries including UK, USA and Japan.

DDT when absorbed through the intestinal tract and the lungs has been found to inhibit an essential enzyme in the heart muscle and to cause disintegration of liver cells.

DDT also causes anaemia, leukaemia and other blood disorders. This insecticide is used here for controlling mosquitoes, flying and crawling pests and crop insects.

Chlordane a volatile insecticide is also banned and restricted in many countries.

It can cause poisoning through inhalation. What is worse is that it can penetrate the skin and accumulate in the body. It may also cause cancer.

It is sprayed on crops here.

IN a survey, 71 per cent of the farmers contacted showed that they did not heed the warnings even though most of them realised that some kind of danger existed.

Nineteen per cent did not even know that pesticides are dangerous!

Malaysian farmers usually spray pesticides using a backpack (knapsack) type of equipment, clad only in singlets or T-shirts, shorts and

slippers which offer little, if any, protection.

When powered sprayers and fogging machines are used, the only protection against inhalation of toxic fumes is usually just a handkerchief or towel to cover the mouth.

Pesticides and pesticide residues that remain on foodstuffs (vegetables, fruits, grain, etc.) pose a constant threat to the health of the consumer.

sumer.

Our farmers, as a whole, work with pesticides, on the average, every four or five days, as a preventive measure.

Vulnerability

Toxic chemical pesticides and their residue tend to be present in the food when it reaches the market.

The greatest danger is that about 94 per cent of our farmers,

according to a survey conducted, use pesticides up to nine days before or even nearer the harvesting period.

This is hardly enough time for the pesticides to be washed off.

A vegetable farmer advised that one way of detecting pesticides in vegetables is to taste them, adding: "If they taste bitter, throw them away as this indicates the presence of pesticides."

AGENT ORANGE is one of the dangerous pesticides listed in the report.

It contains a mixture of 2,4,5-T and 2,4-D and large amounts of Dioxin.

The pesticide was used to clear jungle vegetation during the Vietnam War and American servicemen exposed to the chemical subsequently fathered deformed babies — years after they had returned home.

The chemical 2,4,5-T is used as a herbicide and tree killer in Malaysia. 2,4-D is used as a herbicide only. Both chemicals are usually contaminated with Dioxin as a

by-product. Dioxin is said to be the most poisonous synthetic product ever made by man.

2,4,5-T is banned or restricted in West Germany, India, Italy, Japan, Spain, the Netherlands, New Zealand and USA.

It can cause skin eruptions, liver abnormalities, nerve disorders, changes in respiratory and immune impotence and cancer.

2,4-D is also banned and restricted in the same countries as it is suspected of causing birth deformities.

STEPS TAKEN TO CONSERVE FOREST RESOURCES

Kuala Lumpur BUSINESS TIMES in English 9 Dec 81 p 1

[Text]

THE government has decided on several immediate measures to check the excessive depletion of the country's forest resources and to ensure that all states implement the three-year old policy of establishing a 12.5 million-acre permanent forest estate. Deputy Prime Minister Datuk Musa Hitam said yesterday.

Datuk Musa said one of the measures calls for the states to gazette the effective date for full adoption of the resolution passed by the National Forestry Council in 1973 to establish a 12.5 million acre permanent forest estate in Peninsular Malaysia.

This was expected to be done by the end of next year or early 1983.

He said so far only two states have not adhered fully to the guidelines for depletion of forest resources but he declined to identify them.

The Deputy Prime Minister also disclosed that as all states have agreed to the establishment of the permanent forest estate, they should not alienate any forest reserve area for agriculture purposes. Those which had done so should discontinue this practice.

As an interim measure to check excessive

depletion of forest reserves, Datuk Musa said logging will be held down during the Fourth Malaysia Plan period to not more than 185,000 acres a year in Peninsular Malaysia.

He said the recommended annual rate of felling should not exceed 103,000 acres for those tree species that could be harvested on a 30-year cycle and 82,000 acres for those species with a 50-year harvesting cycle.

He added it was necessary to adhere strictly to this recommended rate of felling because about 700,000 acres from the permanent forest estate had already been used up by some states for agricultural purposes.

Datuk Musa disclosed that states had also agreed to double their efforts on the reforestation programme during the Fourth Plan period so that they would now undertake to rehabilitate 200,000 acres of logged over areas annually instead of the existing 100,000 acre target previously set.

Aside from the accelerated reforestation programme, the Deputy Prime Minister also announced that the "forest plantation compensatory project", which entails the planting of quick

growing industrial species on logged areas of forest reserves will be implemented immediately.

He said several species have been identified for this purpose, and these include the yamani species which could be used as an alternative to the popular meranti species, some long fibre softwood species and teak which is suitable for Kedah, Perlis and northern Perak areas.

Datuk Musa said Sabah and Sarawak would also be included in this forest plantation project so that the two states would also reap the benefits from it.

The Deputy Prime Minister said the Federal Government has set aside a fund for the reforestation and forest plantation programmes to assist the respective states. He did not however indicate the size of this central fund.

The loan would be interest-free and repayable after 25 years including a 15-year grace period. The states concerned would have to identify the areas and species suitable for the forest plantation project.

Datuk Musa also said the introduction of softwood species was in line with the government's

plans to set up pulp and paper mills in the country.

He said Sabah, which has already been successful in the planting of fast growing industrial softwood species, will be setting up one pulp and paper plant in the Sipitang area.

Soil tests, a land survey and an environmental impact assessment have been conducted for the project. A marketing consultant has also been engaged and the construction contract would be awarded in the middle of next year. The proposed plant is expected to have an annual capacity of 25,000 tonnes of writing and printing paper.

Datuk Musa also disclosed that another paper mill would be set up in Kelantan by the Heavy Industries Corporation of Malaysia.

Earlier reports indicated that 80,000 acres of land have been approved by the Kelantan state government for the growing of required species for the proposed pulp and paper mill. A large French firm is believed to be actively pursuing the project, with an estimated capacity in the region of 100,000 tonnes a year.

OXYGENATION POND TREATMENT OF PESTICIDE POLLUTION ACCLAIMED

Beijing GUANGMING RIBAO in Chinese 28 Dec 81 p 1

[Article by Yuan Qinglin [5913 3237 2651]: "Joyous Sight Today of an Expanse of Water Plants Flourishing on Yaer Lake; Aquatic Botany Institute of Chinese Academy of Sciences Gets Very Good Results in Use of Oxygenation Pond Method For Treatment of Organic Pesticide Pollutants"]

[Text] The Aquatic Botany Institute of the Chinese Academy of Sciences has obtained very good results in its study of the aquatic ecosystem's ability to rid itself of pollutants by using oxygenation pond methods to treat organic agricultural pesticide pollutants in the Yaer Lake area.

In the ecosystem, microscopic plants are not only able to break down the remains of animals, plants and excrement, but they are also able to decompose dangerous toxic organic chemical pollutants into simple matter such as carbon dioxide, water, inorganic nitrogen and inorganic phosphate, which can be used by plants. This is a major way in which a body of water is able to naturally cleanse itself of pollutants. Yaer Lake is a shallow lake located in the middle reaches of the Yangtze River in Echeng County, Hubei Province. As a result of the building and putting into production of several chemical plants upriver from the lake beginning in 1961 and untreated discharge into the lake of untreated agricultural pesticide wastewater, the lake became polluted, and water quality deteriorated so that it was no longer potable or useful for irrigation purposes. In the 18 production brigades of four communes rimming the lake, cases of poisoning of people and livestock regularly occurred. Water grasses would no longer grow in the lake, and snails and clams were virtually extinct. Fish were deformed and output sharply dropped.

Working from a basis of many years of on the spot investigation and laboratory experiments, and using the principles of self-cleansing of bodies of water, the No 6 Research Office of the Aquatic Botany Institute of the Chinese Academy of Sciences courageously proposed construction of oxygenation ponds to treat Yaer Lake. Their proposal was approved by the Hubei Provincial CCP Committee and the Echeng County CCP Committee, and vigorously supported by the local masses. Luring fall and winter of 1976, a three-stage oxygenation pond covering a water surface of 6,000 mu was built. By 1979 equipping of the project was virtually completed and the oxygenation pond began operation. The industrially polluted water discharged into Yaer Lake was trapped in the various stages of the oxygenation pond and kept in each stage for from 60 to 80 days. Through photosynthesis, algae in the water produced oxygen, which produced a great proliferation of aerobic microorganisms. These served to

decompose toxic materials and organic materials entering the lake. The symbiotic system of algae and bacteria in the three stages of the oxygenation pond greatly decreased the toxic materials. Daily 5 tons of organic materials were eliminated. This was equivalent to the performance of a biochemical treatment plant requiring annual operating expenses of 250,000 yuan and consumption of 1.26 million kilowatt hours of electric power. The oxygenation ponds gave new life to Yaer Lake, which had lay wasted for more than 10 years. Accompanying the decomposition of toxic substances and the elimination of pollution in the oxygenation ponds was the growth of large quantities of plankton and inorganic nitrogen and phosphorous nutrients, which promoted growth of aquatic plants and fish. The aquatic organism community and ecological balance were restored, and the land facies environment was transformed. Now the Yaer Lake that we see is an expanse of flourishing water plants. Though the water surface area for the raising of fish is less than formerly, fish output has reached an all-time record. For every year since 1979, output has been more than 400,000 jin. Fish content of dangerous substances does not exceed limits that may be ingested, and the fish deformation rate has dropped from the 40 percent prior to treatment to 0.1 percent.

9432

CSO: 5000/4014

PLANTS SELECTED TO COMBAT INDUSTRIAL CHLORINE POLLUTANTS

Guangzhou NANFANG RIBAO in Chinese 4 Nov 81 p 1

[Article by Guang Shuxio [6782 3219 1321]: "Success Achieved in Plant Selection Experiments to Combat Chlorine Pollution; Shade Producing Green Tree Environment at Guangzhou Chemical Plant Exquisite"]

[Text] With the help of units of the South China Botany Institute, the Guangzhou Chemical Plant has selected from among more than 200 plants a group of varieties to combat chlorine pollution for widespread planting in the industrial area. Now these lushly green plants, their tops like umbrellas, play a role both in cleansing the atmosphere and in beautifying the environment, earning the praise of the masses.

This chemical plant is a chlorine alkali plant built in 1958. Because of inadequate attention given to the three wastes [waste gas, waste water, and industrial residue] in the past, the toxic gases and liquids produced in the production process polluted the environment causing the lichee trees and some bamboo groves in nearby production teams to wither, and arousing the ire of the masses. In 1964, Provincial Governor Chen Yu [7115 7599] visited this plant to obtain first hand experience. He required the plant to eliminate effluent and to plant trees. In that same year, the first batch of nearly 1,000 *Casuarina equestifolia* L. trees were planted along the main roads and empty areas at the plant site. In 1974, the South China Botanical Institute, the South China Plant Nursery, and the Guangzhou Municipal Afforestation Commission signed agreements with the plant to begin trial screening of plants to be used in combatting chlorine pollution, selecting some workshops at which chlorine pollution was fairly severe as major sites, and planting more than 200 plants both in pots and in the ground, which were regularly checked on, measured, and analyzed, the plants with strong resistance to chlorine being selected. These included Indian banyan, *Casuarina equestifolia* L., Chinese cassia (*Cinnamomum cassia* Presl.), and bitter catalpa [5388 2737] among a group totalling 11 species. Subsequently, they selected, on the basis of different environmental conditions, plants with strong resistance to "666" and hydrochloric acid in the vicinity of machine repair and hydroelectric workshops, they planted plants with moderate resistance. In the area on front of the plant, they planted scenic trees. Concurrently, they actively reformed production technology, strengthening care and maintenance of equipment. Now more than 30,000 shrubs and bushes of more than 200 different species have been planted in various kinds of hedgerows that meander all around. There are also 58 garden plots large and small, 58 flower nurseries, and 150 square meters of lawns. Flower varieties number almost 100, and the area made green amounts to 99,000 square meters, the rate of coverage with greenery being 85 percent. The appearance of the plant has changed and production has grown over the years. Last year the plant was designated an outstanding unit in management among enterprises nationally.

EAST BLOC'S FIRST ENVIRONMENTAL MOVEMENT APPEALS FOR ACTION

Stockholm DAGENS NYHETER in Swedish 4 Dec 81 p 24

[Article by Maciej Zaremba]

[Text] Last Saturday a new movement was born in Poland that introduced a new and explosive element into that country's already extremely complicated and difficult foreign and domestic relations. The "Green Movement" revealed a catastrophic condition in the ecological balance of Poland, which further complicates negotiations between Solidarity and the government on economic reforms.

Environmental Catastrophe Threatens Poland

"A powerful new movement that respects no geographic or political boundaries has arisen in Europe."

Leaders of the first environmental movement in Eastern Europe began their appeal to the people in this way. The "Association for the Protection of People and the Environment--the Green Movement" is the full name of the newly formed Polish organization which already has the support of Solidarity.

A group of prominent scientists in the fields of environmental protection, agriculture, and ecology, as well as students and advisors from Rural Solidarity, are behind the initiative.

The organization states that its purpose is to become a mass movement that, through peaceful means, will guarantee a "eco-political direction" in the social and economic revolution in Poland.

The facts on environmental pollution the Green Movement intends to disseminate, which have been classified up to now, will shake Polish opinion--but not just Polish opinion.

The unparalleled environmental pollution occurring in Poland, which increased dramatically toward the close of the seventies, also threatens Poland's neighbors.

The figures the Green Movement intends to make public will also give some indication of the situation in the other Eastern bloc countries and how this affects the air in central Europe and the water in the Baltic Sea.

According to a spokesman for the newly formed organization, Prof Zbigniew Wierzbicki, several regions of Poland are on the verge of ecological catastrophe.

The greatest danger comes from sulfur dioxide which is formed primarily during the combustion of coal. It is estimated that total emissions are 4 million tons annually (compare to Sweden which had 0.8 million tons in 1970 over a 40 percent greater area) and according to official predictions emissions will increase to 7 million tons by 1990, or 12 times as much as in Sweden, calculated per square kilometer.

Air pollution increased by 60 percent from 1975 to 1979 and it is strongly concentrated to southern Poland, the mining and steel districts. Worst hit is Krakow--one of two cities in Europe that have been declared specially protected cultural monuments by the United Nations. There 225 tons sulfur dioxide and sulfuric acid fall on each square kilometer (1.78 tons in Sweden). The city is deteriorating and infant mortality is three times higher than in the rest of the country. The poison comes from several steel mills constructed in the vicinity.

It is this and similar extremely disturbing reports that make it probable that the new movement actually will become strong, even though in today's situation every limitation in production means additional hardships for these severely tested people.

There is simply no other choice, or as it is stated in the appeal:

"The ecological threat is now a biological threat."

Because of the increased freedom of the press and the increased responsibility of health authorities in recent years, the Poles have learned things they only suspected before. Several times the authorities have had to warn the people through the mass media not to give milk to children--it was unsuitable for consumption due to insufficient inspection of fodder.

Last summer it was forbidden even to stay on the beaches at most Baltic Sea towns, where beaches were covered by thousands of dead eels that had been washed up by the sea.

There are several reasons for this catastrophic situation. They are listed in a report compiled by Professor Wierzbicki and others in early 1980, but which only now can be openly disseminated.

They are:

The government's total lack of responsibility for the environment when

carrying out industrial projects. Most new factories are constructed without purification facilities.

Poor organization of environmental protection. The Environmental Protection Office, for example, is under the authority of the Forestry and Lumber Ministry, while some 50 institutions are responsible for the water supply.

Ruthless exploitation of natural resources, where increased production is placed above both environmental and human considerations.

An ineffective penalty system in which it is profitable for companies to pay fines rather than purify emissions.

Now the Green Movement is demanding control by society over all decisions affecting the "physical and mental environment," including city planning and military armaments. By shaping public opinion, participating in all representative organs, and by other actions when needed the movement hopes to win its demands.

The appeal expresses a strong sense of belonging to the European environmental movement:

"Participants in the Green Movement see themselves not just as members of their nation, but also as Europeans and world citizens."

"The movement . . . , even though it is opposed by red and white technocracies, is developing spontaneously and . . . is a first step toward changing people's antiquated and consumer-oriented approach to nature."

Education

According to Professor Wierzbicki, however, the most important of the movement is education.

"The truth is sufficiently shocking to make people act. We will now begin organizing local groups in the hardest hit regions and start a newspaper. We are also negotiating with Rural Solidarity for cooperation."

First the new organization must register with the court, however, and Wierzbicki admits he is not sure that this will be a painless process.

Poisonous Milk, Acidic Water

All data on environmental pollution in Poland comes from an official report published as a supplement to the magazine Polish Nature. The report is based on a study conducted by Professor Wierzbicki and others which could not be published before now.

By Swedish standards several regions in Poland are in a catastrophic ecological situation.

Air pollution, i.e. gas and dust emitted by industry and automobiles, amounts to 7.1 million tons sulfur dioxide, nitrogen oxides, and gases containing lead, cadmium, and hydrocarbon compounds, the latter being strongly carcinogenic.

The already high permissible levels of sulfur dioxide in the air (0.35 mg/m^3 air, compared to 0.08 mg/m^3 in the United States) are exceeded several times over, primarily in southern Poland, in Lodz, and in Warsaw.

Increased brown coal combustion is planned for the eighties, however, which will cause the sulfur dioxide content in Warsaw's air to increase fivefold and the national average will be 22 tons/km^2 annually or 12 times as much as in Sweden during the seventies.

Sulfur dioxide is the primary cause of acidified waterways and illnesses such as rachitis, tuberculosis, bronchitis, and circulatory and respiratory diseases, which already have increased markedly in the hardest hit areas.

Lack of Water

Poland suffers from a lack of water. The availability is $1,700 \text{ m}^3$ per inhabitant ($27,000 \text{ m}^3$ in Sweden) and what little there is is wasted because only 52 percent of all wastewater is purified, most only by mechanical means.

Of 803 towns only 350 have purification plants and, consequently, suitable water is found in only every third stream.

The Wisla, Poland's largest river which poisoned beaches along the Baltic Sea last summer, now has no suitable water. But Warsaw also has no purification plants, nor do 60 percent of the largest industries.

Air pollution, intensified by the fact that 81 percent of the most dangerous industries are located closer than 500 m from populated areas and often in the middle of farm land, is the primary reason why 20 percent of all food-stuffs are considered poisoned. Milk is hardest hit--40 percent is considered unsuitable for consumption.

Expensive

Environmental pollution also causes damage to materials--metals rust, buildings crumble. It has been estimated that sulfur oxides cause 80 percent of all material damage at a cost of over \$ 1 billion per year.

And while the emission of sulfur oxides increased by 60 percent during the past 4 years, appropriations for environmental protection decreased during the same period from 7.5 to 5.5 billion zloty.

9336

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HAVANA BAY ENVIRONMENTAL CONTAMINATION STUDIED

Havana BOHEMIA in Spanish 27 Nov 81 pp 28-31

[Article by Gregorio Hernandez: "Pollution in Havana Bay"]

[Text] Havana Bay is a kind of cove with an area of about 5 square kilometers and a volume of approximately 47 million cubic meters of water. Its average depth is 9.2 meters. The Bay is the site of the country's main port and the access channel is relatively long and narrow, opening out toward the interior into three large inlets: Atares, Guasabacoa and Marimelena. Mingling with its waters is the polluted flow from the Martin Perez, Luyano and Arroyo Tadeo rivers, different drains in the city and waste waters from a large number of various types of industries, in addition to runoff from maritime port activities and the services that are located in the area.

For many decades, as far back as the end of the last century, in fact, the problem of pollution in Havana Bay, with its affect on flora and fauna, caused concern and was denounced by institutions and prominent persons in the scientific world at the time. However, it was never taken seriously and there were never any systematic programs or projects to halt or reduce this ecological and socioeconomic danger.

Pollution has now reached an alarming point and the bay of our country's capital is among the dirtiest on the continent. The Revolutionary Government has taken direct charge of the matter and now considers its solution to be a prime concern.

It was precisely for the purpose of finding an answer to this question concerning measures to eradicate the pernicious evil that we invited, along with the Transport Research Institute (IIT), representatives of different organizations of the central government, the Academy of Sciences of Cuba and organs of people's government in Havana City to give their opinions and tell what they are doing to help solve the problem mentioned.

Present were: Manuel Alepuz, director of the IIT; Helenio Ferrer, deputy chairman of the National Committee for Environmental Protection and Conservation of Natural Resources (COMARNA), belonging to the Academy of Sciences; Ivan Hernandez, director of chemical development of the Ministry of Basic Industry; Nelson Jaime, from the IIT Department of Pollution; Mariano Armengol, from the Aqueduct and Sewer System Directorate of the People's Government of Havana City; Aida Bustamante, from the Hydroeconomy Institute; Luis Cabanas, from the Physical Planning Directorate of the People's Government of Havana City; Mario Perez, representing the National

Tourist Institute (INTUR); Salvador Fresquet, from the Ministry of Transport Maritime Security Directorate; and Humaro Molina and Juan Manuel Jimenez, from the Mam-bisas Terminals Enterprise of Havana. Also present were Dr Santiago R. Olivier, principal technical adviser to the CUB/80/001 Project, co-sponsored by the United Nations and Cuba, and Liuba Shabalina and Antonio Villasol, from the IIT.

We regretted the absence of the delegation from INDER [National Institute for Sports, Physical Education and Recreation], which did not respond to the invitation.

We shall now get to the heart of the matter by beginning our questions.

[Question] How is the research program conducted?

[Nelson Jaime] We have to begin by briefly explaining how the CUB/80/001 Project, Marine Pollution Research and Control, is structured. It is part of Principal State Problem 041, Havana Bay Cleanup. Co-participants are institutions from practically all central administration organizations having to do with these problems and whose respective directors are on the project advisory council. The project was officially begun in 1980 and was preceded by other partial research projects done by Cuban institutions and international experiments. Their planned date of completion is the end of 1983.

[Question] How does the project fit into national problems and into the Environmental Protection Program for the Caribbean Sea?

[Helenio Ferrer] Historically speaking, it has been and continues to be the custom of most cities on the Bay to use sea water to dispose of urban and industrial waste. While sea water does have good cleansing qualities because of volume alone, it is equally true that its capacity does have limits and when they are exceeded, life disappears from the waters because of a lack of oxygen. One example of this is Havana Bay.

This situation, which is now becoming dramatic, exists to a lesser extent in other bays in the country such as Santiago de Cuba, Cardenas, Cienfuegos, Nuevitas and Matanzas, depending on the population and industrial growth taking place in those areas.

[Question] What can you tell us about aid given to the project by the United Nations?

[Helenio Ferrer] The project, developed in coordination with the UNDP, the PNUMA [expansion unknown], UNESCO and other UN agencies, enables us to obtain knowledge and experiences that we can apply in a preventive fashion in the rest of the country.

[Question] What does Basic Industry have planned for facing these pollution problems in Havana Bay?

[Ivan Hernandez] Our main problem in Havana Bay is due to the dumping of cooling water and the flow of rain water and so on from the Nico Lopez Refinery. At the present time, the processing of waste from the refinery, based on mechanical separators, does not allow us to reduce the amount of hydrocarbons in waste water dumped into the Bay to under 1,000 parts per million.

An investment program is now underway. During the first phase, new separators are going to be built and the existing ones repaired so as to reduce the amount of hydrocarbons in waste waters from the refinery to one-tenth the current figure before 1985.

[Question] Do you have any cooperation?

[Ivan Hernandez] Yes. This program enjoys the cooperation of the Soviet Union, with which we have agreed to embark upon a second phase of waste treatment, which implicitly implies the creation of new mechanical separators and movement toward treatment by flocculation, flotation and biological treatment for waste waters in order to bring those dumped by the refinery below international norms, which are 5 parts per million. The offensive will involve all our units.

[Question] What can you tell us about the Havana City sewer system?

[Mariano Armengol] The Havana City sewer system was built between 1908 and 1913. It was designed for a maximum population of 600,000 inhabitants and the area served was 25 square kilometers. As the years went by, the systems of numerous districts were connected to the original one, thus expanding the number of persons served in an area of 100 square kilometers to 1 million. Consequently, without even considering infiltration, the maximum discharge has been increased 1.5 times over that provided for originally.

It is easy to understand that the main collectors in the Havana City sewer system do not have the capacity needed to handle waste water from the current population.

[Question] Is there any sanitation plan?

[Mariano Armengol] Yes, there is. We have drafted a sanitation program for Havana City that is the result of progressive studies done based on the general aqueduct and sewer system diagrams drawn up by Bulgarian experts in 1965, thanks to which we made a proposal that was approved by the government directorate in 1976.

[Question] What are the objectives of the program?

[Mariano Armengol] The sewer program pursues the objective of guaranteeing the disposal of all waste water from the city, thereby preventing the pollution of its strata, the coast, the Bay and the environment itself. This would also bring other important benefits, such as the creation of an additional capacity of treated water, usable for industrial purposes, and would ensure that river water could be used for consumption, and so on.

[Question] What solution are you planning to clean up the rivers that empty into Havana Bay and along the coast?

[Aida Bustamante] Solutions to the project to clean up the rivers that empty into Havana Bay and along the coast, proposed by the Hydroeconomy Institute, are fundamentally based on treating industrial and urban waste waters now dumped into these rivers, following the investment program set up for the purpose. To date, work on the project has been aimed at cleaning up the Quibus, Almendares, Martín Perez and

Cojimar rivers. Work underway is in different stages of planning and execution. We have excellent Bulgarian technical assistance on this project.

[Question] How is Havana Bay integrated, or how should it be integrated, with the city?

[Luis Cabanas] The Master Plan being put together by the Physical Planning Directorate of the People's Government of City of Havana views the Bay as an important part of the urban composition of the entire city and therefore provides for multiple uses in all development alternatives.

Now then, what are the uses for the Bay? The most important one -- and it should continue -- is port activity, followed by different types of recreational activities. Among other things, we take into consideration different scenic, contemplative and even recreational activities for the people living in the capital and visitors to the capital.

[Question] What tourist activities could be developed if there were a clean, healthy Havana Bay?

[Mario Perez] Through experience, we are all aware of the recreational activities at the well-known Playita de 16 and the Monte Barreto area, which is an obvious success because it is a spontaneous activity created by the people that forced our institute to provide conditions for the best use of the territory. We believe that the entire coastal zone of Havana City has the same potential.

In addition, we all know the situation of Havana Bay from the standpoint of sanitation and its environmental condition, which are a threat to the development of tourist activities, not only national, but international as well, because there is major growth of one type of international tourism that is cruise tourism -- that is, the access of larger yachts and vessels carrying from 500 to 1,000 passengers, which are part of a large circuit in the Caribbean area.

However, given the current situation of Havana Bay, it is not possible to sponsor this type of tourism, which would undeniably be a great attraction and a good source of foreign exchange as well.

[Question] What about the national aspect?

[Mario Perez] As we said, Havana Bay is the most important aspect in restrictions on the development of the coastal area for recreational activities. We have only been able to study recreational possibilities of the strip west of the Bay and we all know that between the Bay and the Almendares River, there are great limitations. Nevertheless, bacteriological sampling and analyses are being done of the waters in order to define the current level of pollution, because it is in our interest to take advantage of the entire coastal area to alleviate the situation that will continue to exist in the coming years on the eastern beaches, where there is great congestion. It is also used for the daily and weekend recreation of a population that already numbers 2 million.

[Question] What regulations and measures for the protection of the environment are planned for Havana Bay?

[Salvador Fresquet] The Ministry of Transport Maritime Security Directorate has been developing and implementing procedures and measures aimed at preventing and minimizing marine pollution.

Among the practices that pollute our marine environment, we might point to the procedures followed by the Greek flagships "Princess Anne Marie," "Nisso Samos," "Trader," "Evnia," "Anthoula," and others, which have had to pay fines for the damage they have caused.

Empowered by the law passed by the National People's Government Assembly concerning environmental protection and the rational use of natural resources, our Ministry of Transport is working out legislation on the protection of marine resources, including ocean waters, coastal areas, the bay, estuaries, beaches, the insular shelf, ocean floor and living and other natural resources contained in interior waters, territorial waters and the economic zone of waters immediately adjacent to the coast, outside the territorial waters, to the extent provided by law. The law in question will establish the scope, duties and responsibilities of our organization in the protection, improved conservation and more effective development of resources, as well as the definition of a single maritime authority.

The directorates of Maritime Security and of the Transport Projects Enterprise, together with experts from the Central Naval Projects Bureau of the Black Sea, Odesa, the Soviet Union, and planners and designers of equipment and means aimed at fighting marine pollution, have made a complete analysis of the preliminary project for the establishment of operational floating barriers along the coast and opposite the waste channels of the Nico Lopez Refinery, the main source of oil pollution of Havana Bay.

[Question] What work is now being done by the Mambisas Terminals of Havana to fight pollution in the Bay?

[Humaro Molina] The regulations that our enterprise has made to preserve the waters of the port of Havana are classified as internal and external.

The internal regulations include the guarantee that the Sanitation Unit must make maximum use of operations to clean up the Bay.

[Juan Manuel Jimenez] As an enterprise, we are taking external measures with respect to investments in means to limit pollution of the Bay by the main sources. These measures include the floating barriers already planned and we may have them within this 5-year period.

In addition, our enterprise has approved a proposed ministerial resolution imposing fines on national and foreign vessels that dump waste and pollute our waters.

We recently put the Dutch bay cleaner No 6 into operation. It has a processing capacity equal to 50 percent of that of our existing fleet. We plan to fight pollution on board the vessels themselves and directly in the places where it is produced in the waters of Havana Port.

[Liuba Shabalina] In speaking about the pollution produced by the thermoelectric plants, engineer Ivan Hernandez mentioned chemical pollution, but he said nothing about thermic contamination of Havana Bay.

[Ivan Hernandez] We have three problems of environmental pollution at the thermo-electric plants: Smoke, which has nothing to do with the Bay, is the city's problem. The problems of pollution and thermic contamination result from the fact that our facilities are located on the Bay. The cooling needs of the plants — the exchange of heat in the plants — require water, which is why they are on the Bay. Water is therefore cheaper. This water is not recovered. It circulates openly and is returned to the Bay.

The three plants on the Bay are old, from the time of capitalism. We are going to build a large thermoelectric plant in Santa Cruz del Norte and it will serve Havana.

From the standpoint of pollution, we see no solution. The only one that might exist in the future is through nuclear energy. When the national electrical energy system can be based on some other type of fuel, we can then determine that these plants can be closed. The solution apparently lies in shutting them down and that will happen when we have the possibility of doing so.

[Humaro Molina] That team will work 10 hours a day. When I spoke of a plan of measures, I was referring to a cleanup plan for the Bay, but with quality. Why? Because both floating solids as well as grease flow into the Bay depending on how the wind blows.

[Helenio Ferrer] After these explanations, we believe that the solution would mean a solid economic contribution. However, there is another aspect that in some cases turns out to be profitable. I am specifically referring to sanitation devices made available to boats, the final disposal of waste, garbage, and so on. I think this should be emphasized.

[Manuel Alepuz] Here we spoke of the use of the Bay and the port. The economic objective of the Bay was the port, is the port and will continue to be the port. In speaking about the use of the Bay, it is also important to analyze why, in the development schemes for the port of Havana, we have provided for a substantial transformation of it in relation to the city.

Historically speaking, the port of Havana developed along the Avenida del Puerto. It was subsequently expanded with facilities in the Regla area. However, the Master Plan states that port facilities, from La Punta to Ensenada de Atares, will disappear as a port activity. This is a process that will take years. These investments, many underway, involve the Regla area, the four piers, the container terminal and the current zone with its five piers.

This will mean that in time, the Avenida del Puerto will become what it was: a mall or avenue for the city. Logically, there would be no point in recovering the Avenida del Puerto for the city with all its characteristics, that is, extending the dike to the Ensenada de Atares, if the Bay is not cleaned up.

Although we would eliminate the port zone from the historic center of the city, generating a whole series of problems, we would leave that dike without any potential use from the scenic, recreational standpoint if the Bay were left totally polluted.

In other words, the development of new port facilities would undeniably have its objective complement if the sanitation program made it possible to use this

Avenida del Puerto area as an extension of the current dike. This is a detail that we wanted to add to complete the objective of Havana Bay somewhat.

Our Opinion

We believe that the holding of this round table, with the participation of various organizations from the central administration and representatives of the Academy of Sciences and the Havana City People's Government, has revealed the interest in this problem of the pollution of our capital's bay and coast, as well as prospects for its solution, or at least its reduction and ecological salvation.

We believe that this attempt to gain information is very positive and that it opens the way to further exploration of the topic on equally favorable occasions.

May our bay and coast regain the splendor, beauty and cleanliness that characterized them before the entry of "Western culture" enthroned by the European conquistadors!

11,464

CSO: 5000/2036

TRINIDAD AND TOBAGO

BRIEFS

SEAFOOD CONTAMINATION--Oysters and chip chip are facing extinction in and around the shores of Trinidad and Tobago because of polluted waters. That was told to the delegates attending the Oilfields Workers Traders Union's 42nd annual conference by Miss Valerie Andrews, a post graduate student in occupational and environmental health at the University of Texas. Miss Andrews, a Trinidadian, said too, that she was very concerned with the pollution since it would seriously affect the marine life, particularly the fishing industry. [Text] [Port-of-Spain TRINIDAD GUARDIAN in English 1 Dec 81 p 7]

CSO: 5000/7514

COTTONFIELDS CROP DUSTING SEEN HARMFUL TO WATER, FOOD

Stockholm DAGENS NYHETER in Swedish 27 Dec 81 p 10

[Article by DAGENS NYHETER correspondents Anna-Maria Hagerfors and Thomas Michelsen:
"'Poison Olympics' in Gezira; the Giants Are Fighting for Permission to Spray"]

[Text] At very low altitude the crop duster from Swedish Soderalaflyg sweeps across the cotton fields at Gezira, the world's largest farm.

No one knows for sure the cost in lives, health or destroyed environment caused by spreading the poison.

But one does know that it is now more expensive to spray poison on the cotton than to harvest it, even though it is picked by hand by 1 million people.

Gezira, Sudan--Light showers of insecticides from chemical companies all over the world fall over the cotton fields.

The toxic clouds drift like thin, white veils across the irrigation canals, where people, as well as animals, get their drinking water. No one calculates how many are harmed or die.

An international air fleet of crop dusting planes has gathered in order to spread insecticides over the world's largest farm. It is called Gezira in Sudan, and is more than twice as large as Gotland.

Halsingland is participating in the multinational spraying operation with a group of planes from Soderalaflyg.

Fall and winter in Sweden are the spraying periods for the cotton fields in Sudan. The "poison Olympics" are a high point during the season. This is the big competition between the chemical giants over who will get to sell the most insecticide to Sudan Gezira Board, the management of the giant farm.

Not quite 1 hour past sunrise the competition starts at the farm. The temperature is already 30 degrees C. The red and white crop duster is waiting at the dusty air strip -- actually a field beside an irrigation canal. The mechanic polishes the

already shiny windshield. The pilot becomes increasingly irritated over various delays. The starting teams in the big competition are nervously circling the aircraft.

They are the world's multinational chemical giants, Shell and Sandoz, Boots Hercules and Montedison, Dow Chemicals and ICI (Imperial Chemical Industries), among others.

The various companies have brought up beside the runway their metal barrels and drums, which are marked with skulls, crossed-over ears of grain and other warnings.

Each company has its own team of insect specialists, chemists, mechanics and salesmen. Most are Sudanese, but some have traveled there from Europe and Asia as well.

The actual area of competition consists of some of the kilometer-long fields with dark-green cotton shrubs in close rows surrounded by a grid of irrigation canals.

Here is where the various chemical companies will demonstrate how their poisons kill the American cotton worm, aphids, trips, white flies, fleas and mites -- preferably better than those of their competitors.

A total of 39 chemical preparations will now compete against each other in the big test at Gezira. Each preparation is sprayed onto a field, which has been drawn by lot -- afterwards, the harvest results are compared.

Kills the Fish

The audience at the poison Olympics is not large but enthusiastic. It is the children from the village with the low clay houses near the canal. The white and red plane is exciting, of course.

But the children are actually waiting to catch fish. They know that if someone spills poison into the canal, dead fish usually float to the surface. One has only to gather them up and bring them home to the dinner pot. That has been done before.

The sun burns hotter and hotter during the calm morning. The chemical smell is spreading from drums and barrels with all the world's insecticides lined up in the field.

The insect specialist from Gezira's experimental station strides around and supervises the mixing of poisons on the little field. He is something of a linesman at the Olympics. The experimental station is to evaluate the effectiveness of the insecticides of the various companies. The chemicals have previously been tested on a small scale for one or a few years.

Shell's man from London is convinced that his new chemical, Ripcord, is the best. But he is worried that the pilot of the crop duster could ruin everything. If he flies too high or is careless in the turns the superiority of the chemical will not show up.

"No," says the man from Shell, "one should really have people with flags standing in the field to mark where the plane should make the next sweep. And the landing wheels must touch the tops of the cotton shrubs."

In the meantime the Pakistani pilot of the crop duster has lost his temper completely and has flown away before the right poison was pumped into the tanks of the plane. Halfway down the takeoff strip he met a bewildered farmer on his donkey.

The concern is growing among the chemical salesmen.

The competition involves gigantic profits. Sudan Gezira Board is the world's largest insecticide buyer. Furthermore, spraying has increased every year. This season there are plans to spray the cotton fields between seven and ten times. In the mid-1950's, when all this spraying began, it was enough to spray the fields once a season.

Fighting the insects already costs more than picking the cotton at Gezira, all calculated per hectare. Even so, the picking takes place by hand, and every bush is picked three times each season. Altogether, more than 1 million people pick cotton.

At the same time the spraying is increasing, the harvests are getting smaller. The insects have gotten the upper hand. The spraying has killed the natural enemies of the harmful insects.

Now, previously harmless kinds of insects constantly emerge in droves and attack the cotton. Insects, which a few years ago could be exterminated with the toxins, have now become resistant.

The chemical companies' answer is to put out new, stronger and more expensive insecticides, which are now being tested in the big poison contest over the cotton fields.

Resistant

Old toxins are dropped -- not because they are dangerous, but when they turn out to be ineffective. This year is the first year that large-scale spraying with DDT is not taking place, because the white flies in the cotton have become resistant to it.

DDT has been prohibited for 6 to 8 years in most parts of the world. But the chemical multinationals have continued to sell many banned products to Sudan.

"For export only, not registered for use in the United States," it says on the barrels of poison at Gezira. The U.S. authorities require this labeling to protect the state's morality--not the morality of the companies. In other countries where the multinationals are based not even this labeling is required.

Finally, the irritated pilot arrives with his plane. The linesman indicates on the map where the test fields are located, and the plane is loaded with the first toxin samples. The pilot puts on his protective breathing gear and starts up.

The first test field lies quite close. We drive there. As usual, the tenant farmer has not left the field for the insecticide spraying. Gezira Board says that they order the people and their cattle to leave the fields when they are to be sprayed.

But the farmer stands there in his white, nightshirt-like clothing in the toxic fog and checks how the plane flies.

He is skeptical toward aerial crop dusting. Last year he got only one-third the normal cotton harvest on his field.

The Helpers Are First to Meet the Poison; Three Die Each Season

In an old military tent on the fiery-hot field four young fellows are waiting for the crop duster to land. They have to gas up the plane, mix the insecticides and fill the tanks.

Two homemade beds and water from the contaminated canal nearby are the only amenities.

It is helpers and loaders like these four who are exposed to the first hazards of the extermination campaign. They wear coveralls and gloves but no protective breathing gear.

A close friend at another landing field has already died this year. In the past, two or three loaders died each spraying season.

The recurring cattle deaths are other visible and clear damage caused by the extermination. Some of these cases have gone to court and the farmers have received compensation, when 200 or 300 animals died because they ate grass which had been sprayed or drank toxic canal water.

There is even less information about all the others. How did the farmer feel, who stood hoeing the field when a crop duster from Soderlaflyg swept overhead? Or the villagers who had to drink the water in the canal over which the crop duster flew, still trailing its greyish-white toxic fog?

There are many hundreds of thousands of people in the Gezira area who get their water from the canals. The drilled wells are in the larger villages. Poor workers and nomads live in their own villages or camps outside and are totally unprotected.

Many Are Poisoned

Chief physician Abd El Calif Mohammed at the hospital in Wad Medani, the main community in Gezira, says:

"Of course people are poisoned by the insecticides. But how are we to prove it? We have no resources for autopsies on people who died of unknown causes. Also, the surviving relatives don't usually give permission for an autopsy."

That is considered socially degrading in Sudan.

"What interests Gezira Board, the management of the giant farm, is evidently how their salaried employees are doing. The director recently asked me for the reason why the salaried employees so frequently die of heart attacks. Could it be related to the spraying?"

"I replied that in that case tenant farmers and workers at Gezira would also die of heart attacks, and they don't."

Bashir Hamad, professor of medicine at the university in Wad Medani, says:

"Naturally, we are concerned about the intensive extermination in the area. But we are so overloaded with problems such as malaria, schistosomiasis and malnutrition that we have had time to do very little."

"But in cooperation with the Gezira experimental station we have examined mother's milk and found that it contains far more of the insecticide DDT than is permitted by the World Health Organization, WHO."

Toxic Milk

Dr Hindi at Sudan's national laboratory in Khartoum tells us about finding peaks of 8 parts per million of DDT in cow's and goat's milk at Gezira. The average is between 5 and 6 parts per million, ppm. This is four times higher than the FAO-WHO limit, which is 1.25 parts per million.

Dr Gaafar Zargani, a biochemist at the Gezira experimental station, says:

"The spraying with DDT at Gezira has made the mosquitoes resistant. This is why malaria has returned. No one talked about malaria 15 years ago. Now, probably everyone has malaria at Gezira."

"There are no statistics on how many people are injured by the insecticides. There are so many symptoms confused with malaria: nausea, diarrhea, dizziness, headache. One doesn't know if it's the chemicals. But so much is being spread here that nobody knows for sure. The worst thing is that there is aerial spraying so that it drifts with the wind, and that they spray so close to the dwellings."

Furthermore, not only the cotton fields are sprayed. The canals are sprayed with a special snail poison in order to check schistosomiasis. Inside, the houses are also sprayed with organic phosphorus compounds, previously parathion, but now malathion or fenitrothion, against mosquitoes.

No Kites

WHO people working in the area this year found large quantities of dead fish in the canals. This is certainly due to spraying with insecticides such as pyrethroids and with endosulfan. Kites, so common in Khartoum, are no longer found in Gezira. One usually finds many dead kites at the beginning of the spraying season. Then they are gone.

The abovementioned scattered facts are all that is known about the effects of the spraying, which is intensified each year. Sudan, which has a chronic shortage of everything, has not had the manpower nor the money to find out more than that.

Everyone you talk with is aware that this knowledge is incomplete and that reality most probably is even gloomier.

But, as Dr Zargani says in despair: "How can you conduct scientific work without electricity?"

The ceiling fan has just stopped in his boiling-hot office at the Gezira experimental station. It is one of the usual hour-long power failures every day.

3.5 Million Liters of Poison Spread Over the Fields

For this year's extermination campaign Gezira Board has bought more than 3.5 million liters of concentrated insecticide, which is to be sprayed over the cotton fields of the farm.

Included are 18 different preparations. The list begins with Endosulfan, Decis Dimethoate, Ripcord, Sumicidin and ends with Mitac, Kafil Super, Cidial and Malathion. Most of those which exist in Sweden must in our country be handled by specially trained personnel with protective breathing equipment. But many of the preparations are not registered by the Swedish authorities. Besides the liquid poisons one has also bought 150,000 kilograms of the most toxic poison that exists on the Swedish list of permitted poisons, Aldicarb or Temik. It kills even by contact with the skin. In the cotton fields it will be scattered on the ground.

11949

CSO: 5000/2041

BRIEFS

BIETRY POLLUTION CLEANUP--The Ministry of Environmental Affairs has established a coordinating committee and emergency cleanup plan to eliminate the pollution of Bietry Bay. With the material and financial backing of the Ivorian Refining Company (SIR) /mainly responsible for the problem/, the ministry will immediately implement phase one of the three-part plan. The two operations of phase one are: putting an immediate stop to the dumping of polluting agents into the lagoon by means of channeling SIR discharge into a new canal and filtration pond nearby and stopping the flow of polluting agents by building a series of barrages. The other phases of the plan are: the elimination by mechanical and chemical means the hydrocarbons floating on the lagoon and cleaning the banks by use of suitable materials and manual raking. /Summary/ /Abidjan FRATERNITE-MATIN in French 26-27 Dec 81 p 3/

CSO: 5000/5643

NNPC PLANS MEASURES TO CHECK POLLUTION

Kaduna NEW NIGERIAN in English 6 Nov 81 p 17

[Text]

THE Nigerian National Petroleum Corporation (NNPC) has started to negotiate with foreign consultants on how to check environmental pollution in the oil producing areas of the country.

This was disclosed by NNPC General Manager, Inspectorate Division, Mr. Ben Osuno in Lagos on Wednesday while briefing newsmen on the forthcoming seminar of the oil industry and the Nigerian environment to be held at Effurun.

Already, according to him, the NNPC had adopted some practical measures aimed at checking pollution.

These include mandatory monitoring of the environment to detect when any undesirable substance from oil industry operations is approaching an unacceptable level, mandatory stocking of basic materials and equipment for cleaning up any accidental spills and restrictions in the use of chemicals for cleaning oil spills.

Others include controlled disposal of effluents and other waste materials, establishment of contingency measures for tackling emergencies that might lead to environmental pollution and award of scholarships to Nigerians to undergo post graduate courses related to environmental science and engineering.

Mr. Osuno explained that the main objectives of next week's seminar was to keep the public informed on what was being done to minimise oil pollution and its effects in the country.

The seminar, he stated, would provide a forum for current practices of the oil industry in the country to be defended and criticised.

Mr. Osuno said speakers from foreign government and private organisations as well as from local establishments had been invited.

He pointed out that experience had shown that man's industrial activities often pollute the environment.

CSO: 5000/5640

FLOOD CAUSES SERIOUS DAMAGE IN PLATEAU

Kaduna NEW NIGERIAN in English 5 Nov 81 p 1

[Article by Mohammed Salau]

[Text]

MORE than 600 farmlands, crops, buildings and other valuables estimated at over three million Naira have been destroyed by a flood disaster which swept the project area of the Lower Benue River Basin Authority (LBRBDA) in Dep, Plateau State.

The disaster was said to have been caused by a continuous downpour which lasted for five consecutive days in Dep.

Reports reaching the headquarters of the Lower Benue River Basin Development Authority in Makurdi confirmed that crops such as maize, guineacorn, millet, cassava, banana, orange and sugar cane were destroyed in more than 600 farmlands in the project area of the authority.

Also destroyed by the flood were building structures including offices and residences.

Confirming the report in Makurdi yesterday, the Assistant General Manager of the authority, Alhaji Abdullahi S. Aliyu, said already, a team of officials of the authority have visited the disaster area to assess the situation.

The general manager said in view of the extent of damage by the flood, he has urged the Federal Government to declare the area a disaster area.

He has also urged the Federal Government to deploy immediately the committee respon-

sible for national disaster to the area to assess the situation with a view to providing necessary assistance to the victims.

The general manager said the affected farmers were beneficiaries of the authority's modern irrigation scheme at Dep.

He confirmed that the present plight of the victims was too pathetic, adding that they needed urgent attention.

Alhaji Abdullahi, however, assured that his authority would do its best to render every possible assistance within its limited resources to the victims of the disaster.

RAIN SAVES DROUGHT-STRICKEN FARMERS

Salisbury THE SUNDAY MAIL in English 3 Jan 82 p 1

[Text] Zimbabwe's drought-threatened farmers this weekend welcomed the new year which brought long-awaited rains, just in time to save wilting crops.

Inyanga farmer Mr "Holly" Holland said: "We've just had terrific rains. The situation was getting desperate. For the first time in 30 years we have had to water the mealies."

A Meteorological Department spokesman said the long overdue inter-tropical convergence zone, which brings the rains, was intensifying.

"At the moment pressure is rising and we should be getting some quite reasonable rainfalls in the south and then the north," he said.

There had still been very little rain in Matabeleland and agricultural officials predicted that the maize crop would be 30 percent down on last year because of late and patchy rains last month.

Marula rancher Mr Jack Rosenfels said: "In most areas the situation is pretty desperate. Some farmers have been fortunate and had a few odd showers which sorted out their immediate problems, but generally the whole area is very desperately in need of rain."

The chairman of the Mashonaland Farmers' Association, Mr Nick Townsend, said the situation in his district north of Salisbury, was "much, much better. We were really getting desperate."

He said: "Our crops will be fine, providing it continues to rain. We haven't lost anything because of the drought as we planted late, but those farmers who planted early have suffered very severely."

Victoria Province farmer Mr George Hartley said his crops were saved by rain yesterday morning. "It was getting a bit desperate and one was getting very worried about the maize."

The meteorological spokesman said rain in the last week was confined mainly to the north-east with highs at Umvukwes, which got 91.5 mm of rain on Monday, Henderson, with 52 mm on Friday and Rusape, 59.6 mm on Monday.

CSO: 5000/5639

STATE PLAN TO BUILD DAMS REPORTED

Salisbury THE HERALD in English 12 Jan 82 p 5

[Text] **THE** Government will build dams for small irrigation schemes and domestic water supplies, the Minister of Natural Resources and Water Development, Senator Joseph Mafika, said yesterday.

Speaking at the Zimbabwe Promotion Council lunch in Salisbury, he said only about 20 percent of the country's population had adequate access to safe drinking water.

"I am determined to correct this and in our development programme the Division of Water Development will be working in line with the objectives of the International Drinking Water and Sanitation Decade.

"Safe potable water supplies are essential to raise the standard of health and living for our rural population and these supplies are being given top priority in our work," he said.

The Government was aware of the need to ensure that development was not inhibited by the lack

of assured supplies of water for all sectors of the economy.

Since independence about 4 600 borehole supplies in the rural areas had been repaired and were working.

Senator Mafika also appealed to district councils to ensure that land within cultivated areas was adequately protected by conservation measures.

"Present reports indicate that people are continuing to cultivate riverbanks and vleis without regard to Government policy. Two proposed dams designed to have a total storage capacity of 4 million m³ are in such a condition that the dams will silt up in a short period."

The Sabi River was silting up so much that it could change its course and flow over good irrigation land if the river flooded.

Senator Mafika said the country's indigenous timber resources were being used without thought being used without thought for the future,

which would result in spoiling soil and water.

"If we are to save what is left of our indigenous woodland we must find a substitute for over 4 million people who have timber as the only source of fuel for cooking and heating.

"The Government is expanding its plantations, supported by the private sector, and it has made available significant funding to the Forestry Commission to develop its training facilities," he said.

He welcomed financial support to the Conservation Trust, the Wildlife Society and the Tree Society which, he said, played an important role in the Government's conservation aims.

The vice-chairman of the Zimbabwe Promotion Council, Mr Philip Chipudha, said the council was organising tours for children from schools and colleges to show them the importance of conservation.

BRIEFS

CLOUDS SEEDED--Extensive cloud seeding operations have been carried out in an attempt to bring rain to crops hard hit by the pre-Christmas drought. An Agricultural Technical and Extension Services report said that up to last Tuesday more than 1,000 clouds had been seeded. The report said that, while there had been widespread rain, more was still needed in many farming areas. The uncertain weather had resulted in poor germination leading to uneven stands, much replanting and a very late start for some crops. Tobacco had suffered from sun scorch, loss of leaf and in some areas, stunting and early flowering. Planting of quick maturing maize was still being carried out in some areas. The recent rains had improved grazing, but the condition of livestock was at best "fair." [Text]
[Salisbury THE SUNDAY MAIL in English 10 Jan 82 p 3]

CSO: 5000/5642

KAZAKH MINISTER SAYS ELECTRICAL ENERGY CONSERVATION PROMOTED

[Editorial Report] Alma-Ata QAZAQSTAN KOMMUNISI in Kazakh No 9, September 1981 carries on pages 46-50 a 2,800-word article by B. Ivanov, KaSSR Minister of Power and Electrification published under the regular rubric "For an Economical Economy" and entitled "Kazakhstan Energy; Conservation and Its Profits." Since L. I. Brezhnev called for conservation of natural resources, Ivanov points out, socialist competition has been organized in the KaSSR for the conservation of energy and material resources, and considerable success has been achieved in the republic in this area in recent years. Ivanov examines KaSSR electrical energy, the major energy resource in the republic (current plans call for 90-95 billion kilowatts a year by 1985, a goal that will require major new facilities at Ekibastuz, in southern Kazakhstan, at Shul'ba in the Altay and elsewhere). Ivanov states that electrical energy has enormous conservation potential: electrical energy from nuclear and hydroelectrical plants can reduce dependence on fossil fuels (a 70-80 million ton reduction in fuel expenditure norms is called for by 1985 in current plans); also new, more efficient equipment and automation and computerized management can also reduce fuel use in power generation.

9857

CSO: 1832/1022

YOUNG PEOPLE MAJOR FORCE IN KAZAKH ENVIRONMENTAL PROTECTION

[Editorial Report] Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 11 December 1981 carries on page 1 an 800-word boldface editorial on the role of young people in Kazakh environmentalism. Preservation and proper exploitation of the natural environment and increase of natural resources are of the utmost importance today and for the future. Therefore, the party and the government are taking active measures in this area. Protection of the natural environment, however, is not just the business of agencies and enterprises but also of the broad masses of the people and, within them, of young people in particular. The editorial discusses the role of republic young people in various environmental activities with special reference to the ways in which school work is being combined with practical environmentalism as a means for educating the future constructors of communism.

9857

CSO: 1832/1071

OSKEMEN CITY ORGANIZED TO FIGHT AIR POLLUTION

[Editorial Report] Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 25 November 1981 carries on page 4, under the regular rubric "Man and Nature," a 1,300-word article by Q. Berikbolov, secretary of the Oskemen City Party Committee, on the organizational structure for fighting air pollution in Oskemen City. Concern for the environment is called for by the times, the author notes, and the "Basic Directions for the Development of the People's Economy and Culture During the Years 1981-85 and in the Period Up Until 1990" call for increased protection of nature; of the earth and what is below its surface, the atmosphere, water, fauna and flora. Oskemen City is responding to this call since the rapid development of industry there has created air pollution that is endangering the health of Soviet citizens. Berikbolov also discusses responses to the problem from local party and other organizations, with special reference to the Environmental Protection Committee under the Oskemen City Party Committee. The committee is comprised of party and soviet workers, enterprise managers, heads and specialists of industries, scientific research and planning organizations and health workers. It has the responsibility to oversee the execution of environmental measures and the operation and installation of environmental protection equipment, to find ways to use such equipment efficiently and coordinate the efforts of workers in various inspection organs.

9857

CSO: 1832/1060

MAJOR REFORESTATION EFFORT UNDERWAY IN KAZAKHSTAN

[Editorial Report] Alma-Ata SOTSIALISTIK QAZAQSTAN in Kazakh 17 November 1981 carries on page 4, under the regular rubric "Man and Nature," a 1,300-word article by L. Litkov, head of the Agriculture and Forestry Section of the KaSSR State Planning Committee, on the present state of Kazakh forests as well as plans for the future. Although Kazakhstan, he begins, appears to be entirely steppe, it, in fact, has a number of green areas, there are over 21 million hectares of forest lands in the republic, including 9 million hectares where trees are grown for commercial use. Still, with only 3.3 percent of its total area forested, Kazakhstan is deficient in trees and must conserve wood resources and increase them. To achieve these goals, forested areas must be protected, particularly those areas where wood procurement cannot occur without destruction of the forest (category one of three forest-use categories in the KaSSR; the other two categories refer to decreasing forests with limited procurement and industrial forests); less than the maximum amount of wood possible should be procured to increase resources (the maximum is currently some 321 million cubic meters with an annual average rate of increase of about 9 million cubic meters, only about 40 percent of which is procured); more efficient planning, better and fuller use of wood procured; and a major effort in reforestation to turn Kazakhstan into a major forest region in the Soviet Union. The article emphasizes the importance of forests for preventing erosion and preserving pastures and of wood products in livestock feed supplements. In addition forests must be protected from damage from insecticides.

9857

CSO: 1832/1059

PROVINCES SEEN UNWILLING TO PROTECT WILDLIFE PRESERVES

Copenhagen INFORMATION in Danish 10 Nov 81 p 6

[Article by Bent Soby Madsen, journalist]

[Text] The conservation effort has come to a standstill throughout the country, even though many nature areas are threatened. When the provinces took over nature conservation from the local conservation planning committees on 1 January 1979, many feared that conservation would become impossible. These fears have proven to be well-founded: basically, conservation of biotopes has been discontinued and, despite warnings from nature organizations, a technocratic view of nature is becoming predominant everywhere. Compared to the local conservation authorities, the provinces have collaborated with purely economic interests and a simple count shows how matters stand: last year the provinces brought only one case to court.

It is primarily agricultural interests that were to be met by the new law of 1979. With the help of the Progressive Party, the Liberal Party forced the Social Democratic government to abolish the conservation planning committees which were not always energetic in their work, but at least they could feel the pulse of the local environment and, therefore, often could take action in time when the environment was threatened, for example, by drainage.

Protests in Vain

Most of the nature organizations protested in vain before the law was changed, since they feared that the provinces would bow exclusively to economic and business interests with regard to the utilization of nature and it may be determined today that these fears were well-founded. At the same time, conservation efforts under the auspices of the Conservation Board have become almost ludicrous. For example, this year a large-scale effort began to save Denmark's reptiles and amphibians and on 1 March a law came into effect for the total conservation of these species.

Unfortunately, these animals live in water and the Conservation Board has no power to preserve their habitats, since these were under the jurisdiction of the provinces.

At the same time, of course, it may be seen that the provinces have granted permits en masse for both drainage of potential farm land and for changing the course of streams.

All the Conservation Board could do was issue a pamphlet urging people to protect the habitats of these animals.

It stated: "According to the regulations of the nature conservation law, certain streams may not be altered without permission from the provincial council or the municipal council. The same is true of bogs over 5,000 m², village ponds, and similar public ponds in populated areas, as well as for other lakes larger than 1,000 m². Even though other ponds are extremely small, many of them are of great importance as breeding grounds and habitats for a number of amphibians. So give nature a hand and protect all ponds from pollution, filling, and drying."

No Law

Without question, it would have been much more effective to pass a law that would prohibit the ruthless exploitation of the last marshlands instead of issuing this appeal which one may take or leave as one sees fit.

With the provinces' liberal practice of granting permits and dispensations, combined with the total absence of any protection for small ponds, the future appears bleak.

There will be no coordinated effort by nature conservation authorities before 1983. Until that time, conservation plans are to be incorporated in regional planning and toward that end the provincial councils are evaluating the natural resources of the individual provinces.

According to all indications, however, it will be at least 5 years before the results of such an evaluation can be available--and in the meantime drainage permits will continue to be granted and landscapes changed where economic interests dictate.

Poor Protection

The only "protection" for natural environments today are zoning laws, the environmental law, and sporadic regulations. However, the zoning law provides no basis for evaluating nature and does not employ natural value as a criterion, so that dispensations are granted extensively wherever it can be documented that changes in the environment would be profitable. The municipalities often determine the contents of zoning laws and in sections of the country where there is no great understanding for conservation arguments, such arguments are not even considered when zoning laws are drawn up.

With regard to the environmental protection law, it has been shown recently that it is not worth the paper it is written on.

Legal proceedings based on the environmental protection law often are appealed by the economic interests involved to the Environmental Appeals Board, where representatives of industry are predominant and where, to this day, not one decision has been made in which the greatest consideration was not given to farming or business interests.

The possibility of appealing a decision of the provincial councils is also worth little. For example, in 1980 the board confirmed 20 decisions by the provinces.

It is seldom necessary to appeal the decisions of the provinces, however. Normally, dispensation is granted to whomever seeks it and, thus, both the environmental protection law and the construction law are more open to interpretation than the restrictive conservation declarations on which environmental protection previously was based.

Economic Interests

Of course, it is also in environmental debates that the miserable economic situation that is responsible for the ruthless exploitation of nature is brought up more and more often and, without being a pessimist, one may foresee the day when the countryside effectively is changed into a steppe, while at the same time the conservation work of the past 50 years is forgotten.

Chairman of the Supreme Conservation Board, Bendt Andersen, expressed previously this year (radio news on 17 June) that the Conservation Board and the Supreme Conservation Board may just as well be abolished. This opinion has raised some consternation in environmentalist circles, but perhaps Bendt Andersen has succumbed to the delusion that the various zoning and environmental laws provide effective protection.

During the almost 3 years in which the conservation planning committees have not been permitted to take conservation issues to court, the possibilities of environmental protection have become even more difficult for those planning to turn to the courts.

The administrative aspect has been bureaucratized to the point of absurdity. An organization such as Denmark's Nature Conservation Association which, with its 125,000 members, should be able to obtain resources to handle conservation cases, has had to cut back on the number of such cases backed by the association because of its complex and laborious new procedures. In 1976 the association initiated 26 proceedings compared to only 10 last year.

An additional problem is that local input has been removed from the conservation process now that the conservation planning committees have been abolished and the Nature Conservation Association has neither the manpower nor the knowledge of local conditions to step in where local associations would be right at home.

In regions where there is no active nature organization, for example a chapter of the Danish Ornithological Society, nature is subject to the discretion of the provincial council and the interests of farming and business.

In the latest issue of the Nature Conservation Association's bulletin NATUR OG MILJØ Elo Hartvig, civil engineer and head of the Industry Council's environmental office and that organization's representative in Denmark's Nature Conservation Association's committee on pollution, expressed industry's view of the environmental issue for the near future:

"From industry's standpoint, however, we must say that now is not the time for new campaigns in the field of the environment. We have gone so far that it is now reasonable to place higher priority on other tasks besides expensive campaigns on environmental issues."

Depressing

Thus, the chances that industry will be a future partner in protecting the environmental are exceedingly small. Despite unemployment among those who are supposed to "keep the wheels moving" the head of the Industry Council's environmental office lacks the imagination to see that in just such a situation with high unemployment, some of this unused labor could be used to protect the last remains of the country's natural regions.

Otherwise, there would be a reasonable chance of initiating an effort--and a hurried effort, at that. In 1980 the Conservation Board published a report entitled "Status of Denmark's Plant and Animal World," which concluded that if no measures were taken in the next 20 to 30 years, Denmark would not have one bog, one riparian meadow, a single natural stream, common, or heath and the country would suffer a catastrophic loss of both plant and animal species. Numerous species are already threatened with extinction.

If further destruction of nature is to be stopped, significant restrictions are needed. They are needed here and now and despite the wishes of the industry and farming lobbies for continued growth.

9336

CSO: 5000/2019

ENVIRONMENTAL PROBLEMS OF GIANT COAL-FIRED POWER PLANT AIRED

Stockholm SVENSKA DAGBLADET in Swedish 6 Dec 81 p 21

[Article by Dag Bjerke: "Denmark Concentrates on Coal Power; Swedish Company Purifies the Smoke"]

[Text] Kalundborg--With forced elegance the futuristic shell of Denmark's newest coal-fired power plant, at Asnaes on the southern tip of Sealand, tries to conceal the fact that energy technology has taken a step backwards.

In Swedish eyes the Asnaes plant, with enormous piles of coal in front, gives a premonition of what is to come now that our country as well is turning onto the new-old track: from oil dependence to coal dependence, from oil pollution to coal pollution.

Because of its flat topography, which does not allow for hydroelectric power and due to a strong popular opinion, which does not want nuclear power, Denmark has already been forced a long way toward this, the original energy source of industrialization.

Until the 1950's Denmark got most of its energy from coal. On the other hand, in 1972, just before the so-called oil crisis, more than 90 percent came from oil. The pendulum has now swung far back via converted oil-fired power plants and newly built coal-fired plants: Now, more than 80 percent of Denmark's energy again comes from coal.

Coal From Many Places

The Asnaes plant, in operation since Queen Margrethe inaugurated it on 29 September this year, is fired by coal powder, which has been ground and mixed from coal from many corners of the world: Venezuela, South Africa, India, Canada, Mozambique, the United States, Australia, Poland, the Soviet Union, England and Norway.

Every supplying country has its own quality of coal. The water content is highest in Norwegian coal, while it is low in that of South Africa; the sulfur content is high in coal from the western United States, low in Indian coal; the energy content is high in Australian coal, low in Polish coal, etc.

A country with coal resources of its own builds power plants which suit the domestic coal. Denmark lacks coal of its own and also does not want to become dependent on a few suppliers: Today, the country -- without moral considerations -- buys wherever good coal is cheap.

Various properties of the coal pose various demands on the different parts of the power plant: A low heat-energy content means that a lot of coal must be burned in order to provide the desired energy. The amount of coal, ashes and exhaust gas increases, and the corresponding facilities must be built very large. A great deal of water, which is usually evaporated in the coal power mills, causes corrosion (rust) problems in them, etc.

A Kind of 'Average Coal'

The Asnaes plant is an attempt to simultaneously meet all of these demands, and the attempt has been made to turn the disadvantage into an advantage: According to carefully worked-out "recipes," coal from various countries is mixed into some kind of "average coal," which suits this plant.

This technique presumes a spacious "pantry" for all of the ingredients. This is what the Danes got by taking a large chunk when they filled in the sea with sand and in this manner increased the surface area of Denmark in order to make room for their new power plant.

Swedish technology has been allowed to take care of the residue of the "coal from all over the world," which the Danes burn up at Asnaes.

Large amounts of so-called fly ash, in appearance and consistency much like ordinary talcum powder, usually follows the smoke from the furnace up through the 220-meter high smokestack.

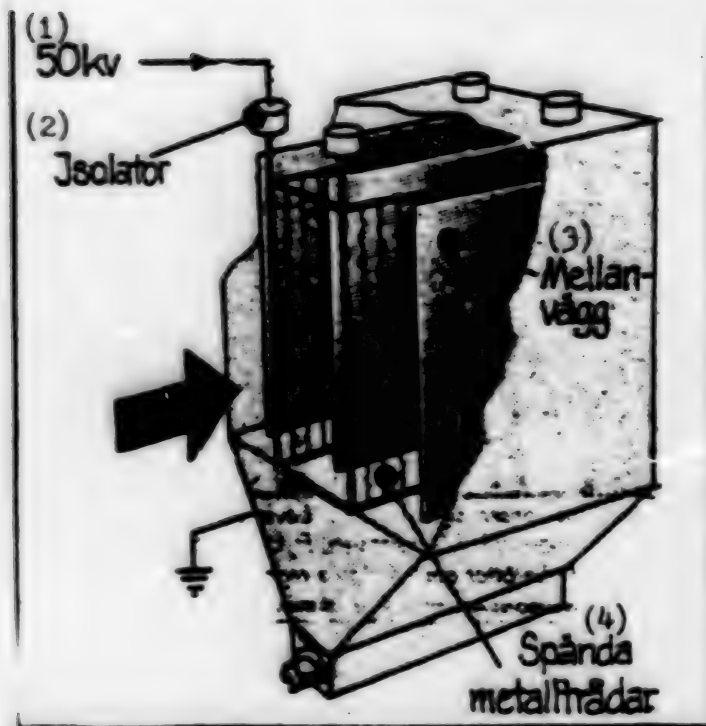
Svenska Flakt has (as a test of what is to come in Sodertalje next fall, Sweden's first big after-the-oil-crisis coal-fired power plant) been allowed to install electrostatic stack gas filters, which catch most of this fly ash.

This takes place by conducting the gas into a cage with many vertical, tightly stretched, metal spirals and sheetmetal panels, which are also vertical. A potential difference of 50,000 volts is established between the wires and the panels. The strong electrical field, strongest near the wires, transfers mainly negative electrical charges to the particles in the stack gas.

These negatively charged particles are attracted to the metal panels and adhere to them. As the stack gas gets cleaner the panels become covered by dirt, and they must therefore be shaken at regular intervals in order to rid them of their coating.

The dust which has been caught and shaken loose falls into a container under the electrostatic filters. From there it is pneumatically transported in narrow pipes to a collector, using a transportation system jointly developed by Svenska Flakt and Atlas Copco. The intent is for the fly ash to be reused in the cement industry, and this is already taking place to some extent.

Nothing is done about sulfur dioxide, the villain behind the increased acidification of the global environment. However, in the abovementioned plant in Sodertalje Svenska Flakt has also been given the task of scrubbing sulfur dioxide.



The tensioned spiral wires in the path of the stack gas provide a high electrical potential with respect to the vertical dividing panels. The electrical field causes the dust particles in the stack gas to become negatively charged, which causes them to be attracted to the dividing panels. The pollutants settle there in layers which must be shaken loose. The dust falls into the funnel under the filter, and from there it is removed to storage, in order eventually to be used in the cement industry.

Key: 1. 50 kilowatt
 2. Insulator
 3. Dividing panel
 4. Tensioned metal wires

Oil as Well

The new Asnaes plant burns about 230 tons of coal per hour, which produces an electrical yield of 640 MW. The plant can also operate with oil, or mixtures of coal and oil, and then uses 130 tons of oil per hour.

Each ton of oil must thus be replaced by nearly twice the amount of coal by weight (230:130=1.77). The coal burned at Asnaes is required to have a sulfur content

below 1.7 percent, which could be compared to burning oil with a sulfur content of about 3 percent ($1.77 \times 1.7 = 3.0$).

In Sweden the burning of oil with 2.5 percent sulfur is permitted only in sparsely populated areas of northernmost Norrland. Heavy heating oil may here contain one percent, and home heating oil 0.3 percent.

The mainly western winds which prevail over Scandinavia will thus supply southern Sweden with not inconsiderable amounts of sulfur dioxide precipitation from Asnaes. On the other hand, we can be happy that we in turn will spare Finland the emissions from Sodertalje.

11949

CSO: 5000/2041

ENVIRONMENTALISTS OPPOSE GOVERNMENT'S CLEAN AIR STANDARDS

Hamburg DER SPIEGEL in German 30 Nov 81 pp 178-179

[Article: "License for General Extermination"]

[Text] Environmentalists Criticize Bonn's Plans for Changing Clean Air Legislation

Monika Zimmermann, 25, business-managing member of the board in the German Federal Association for Environmental Citizen Initiatives (BBU), finds "the list of those who were invited highly interesting."

In addition to the BBU four additional environmental organizations were invited to the Ministry of the Interior on Monday of last week for a hearing on the subject of Bonn's plans to amend the clean air laws. They ran into a superior force almost five times as powerful.

The list of the industrial associations invited to voice their opinions read like an index of all the principal organizations of FRG air contaminators, the list ranging from the Federal Union of German Industry, the Industrial Sugar Union to the Federal Association of the German Scrap Industry--nobody was forgotten.

The representatives of industry did what they are expected to do: they complained, and they had a little reason to complain. Because in comparison with the currently applicable administrative specifications, the so-called TA-Air of 1974, the Bonn draft amendment provides for a sharpening of the law at different points.

Binding emission values will for the first time be established for the highly toxic heavy metals lead, cadmium and thallium. The allowable fluorine discharge is being lowered, the fraction of carcinogens such as asbestos and arsenic is being reduced to from 0.1 to 5 milligrams per cubic meter of air--doubtless long overdue corrections of a specification in which [at present] the severest limitation is 20 milligrams.

But even louder than those of the industrial lobby were the complaints in Bonn from the environmentalists. They had even more reason to complain.

For example, contrary to the advice of forestry experts, biologists and medical doctors many guideline values remain unchanged which are altogether too high. Thus according to the draft proposal in Bonn a value of 140 micrograms of sulfur dioxide per cubic meter of air will be permissible in the future--although the International Association of Forestry Research Institutes, concerned about the consequences of increasingly acid rain, has ascertained that the greatest admissible value ought to be 50 micrograms.

By fixing the old standards, warns the (uninvited) Freiburg Economic Institute, "the technical development of emission control measures is being blocked and the immediate application of new medical knowledge is being impeded."

To be sure Baum's staff asserts that despite the "nominally unchanged limiting values" for SO₂ the air pollution could be practically reduced "by as much as 30 percent" by "the introduction of precise procedures for measuring the contamination." However, independent environmental experts doubt whether the expected SO₂ reduction can actually be realized; many even expect a "deterioration" (German Conservation Association).

It is difficult to decide whether the draft proposal is too lax or too severe: in the view of the BBU large portions of this "arcane publication for insiders," larded as it is with formulas, are "unintelligibly or ambiguously formulated"--almost as though "the discussion and use of the text were to be restricted to a few professional industrial specialists and administrative lawyers."

As a matter of fact the draft proposal provides that the evaluation areas employed for establishing the quantity of acid precipitation shall be reduced from 4 by 4 kilometers to 1 square kilometer. And actually this reduction of the measured areas surrounding an air-polluting factory prevents a future use of a measuring procedure in which a threefold pollution close to the plant is "averaged away" with the help of below-average values measured in the more widespread surroundings.

In the meanwhile: the reduction of the evaluation areas is /not/ [in italics] to be applicable in regions which are relatively lightly contaminated and also /not/ [in italics] in those regions where the discharges are continuously measured; essentially the latter are the more heavily polluted zones. This means, BBU experts infer, that the sharpening of the measurement methodology announced by Baum "is practically never put in effect."

Critics of the draft proposal also consider that they can infer from a number of other details that the minister of the interior while "paying lip service to a sharpening of environmental regulations" in reality "wants in the main to extend the investment potentialities of industry at the expense of ecological and hygienic goals."

In the future there will be an omission of the so-called short-term value in which injurious peak pollutions in the computations are precipitated with special severity and hence are labeled by the experts as "licensing obstacle No 1." If this limit is no longer maintained then, fears the BBU, there will result a "reduction in emission protection" in topographically and meteorologically disadvantaged areas.

The draft proposal provides for special protection of animals and plants only whenever in national parks and in conservation areas--amounting to scarcely 1 percent of the FRG area--a "significant population" is threatened. In this case the SO₂ contamination is to be limited regionally to 60 micrograms.

Against this clause environmentalists object that 60 micrograms suffice to injure many living things, including trees, permanently. But above all they maintain that the specification constitutes a license for the "general extermination of animals and plants outside conservation areas and national parks" (BBU).

The protection of flora and fauna against excessive sulfur contamination is to be sure also to be guaranteed in the "neighborhood" of industrial plants--although not in locations where the air pollution is already "indigenous." The BBU compares this policy ("whatever is contaminated is soonest spoiled") with "a prosecution which is suspended in certain quarters of the underworld whenever it is established that the criminality rate has exceeded a certain value."

Critics of the draft proposal in the BBU (but also in the DGB [German Trade Union Federation] consider particularly dangerous a new "cleanup clause" which provides that in highly contaminated regions additional installations may be approved whenever the applicant presents "a reduction in emissions from other facilities which he is operating consistently with regulations."

The BBU is of the opinion that this "horse-trading paragraph" will lead to "dragging the public's heritage of clean air down to the level of the marketplace" and harbors the "acute danger that heavily emissive old installations will be kept in operation with the object of using them as 'emission collateral' for the approval of new installations."

With a number of other regulations Bonn's clean air law will in the future set down in black and white what it has already for a long time been putting into effect: a "high chimney policy." The proposal deserves the title "Technical Introduction to the Uniform Distribution of Air Pollution."

Also the possessors of forestland fear that Baum's draft proposal "admittedly reduces the contamination of the immediate surroundings but at the same time displaces the damage over a large area into regions which have hitherto been still intact ecologically."

If the regulation goes into effect as planned in the spring with unchanged, "irresponsibly high" SO₂ values then, prophesies the German Conservation Association, there will result "with absolute certainty a further destruction of forest which will put in the shade all that we have ever seen in the past."

8008

CSO: 5000/2028

BRIEFS

SCIENTIST SAYS MEDITERRANEAN CLEANER—Nice (Southern France), 18 Dec—The Mediterranean is appreciably cleaner than 10 years ago, thanks to scientific cooperation among its bordering states, French scientist Maurice Aubert said here. Further progress could be made with projects like that under which recycled water was pumped back into the sea away from the coast, Aubert, Director of the Medical Biology and Oceanography Study and Research Centre here, added. The centre, founded 22 years ago by this vacation resort, keeps a daily check on sea water. Decreased sea pollution has led in some areas to a noticeable increase in local fishing. France's Mediterranean coast was safe for bathers except at the major port of Marseilles, Aubert added. NAB/AFP [Text] [Rangoon THE WORKING PEOPLE'S DAILY in English 20 Dec 81 p 2]

CSO: 5000/4909

PCB SEEN VIRTUALLY WIPING OUT OTTER POPULATION

Stockholm SVENSKA DAGBLADET in Swedish 22 Nov 81 p 21

[Article by Lennart Lundegardh. Source: SVERIGES NATUR 6, 1981]

[Text] The number of otters that are living in the wild in Sweden is now probably only a few hundred. Fifteen years ago there were about 2,000. The scientists suspect that the pollutant PCB is the main culprit responsible for the decline.

The continuing decline is very alarming, considering the fact that the otter became completely protected by law in 1968. It is obvious that this protection has not been helpful.

Three scientists (Mats Olsson of the Museum of Natural History, Lars Reutergardh, the National Environmental Protection Board and Finn Sandegren of the National Board of Agriculture and the Swedish Sportsmen's Association) are discussing the threat of extinction against the otter in a recent report.

The otter belongs to the "state quarry." Thus animals that are found dead have to be brought in to the authorities.

Of the total of 53 otters that have been sent to the Museum of Natural History since 1970 54 percent have been killed by traffic, 13 percent have been killed by fishing equipment, 12 percent by illegal hunting and the remainder by unknown causes.

The Otter Population Is Growing in Norway

Less significant in this context are acidification, water regulations and disturbances. The picture is getting clearer now that results of extensive chemical analyses of the dead animals are available.

The analyses have been made to determine the levels of mercury, DDT and PCB in the animals' bodies. Twenty-three otters from the northern Atlantic coast off Norway have been used for reference. That is one of the rare areas in Europe where the otter population is growing.

The DDT levels are low both in the Swedish and the Norwegian materials. The mercury levels are somewhat higher in Swedish otters, but not high enough to cause the

decline. PCB presents a different picture. While the 23 Norwegian otters had an average of 17 mg/kg, the Swedish average was about 120.

High Levels

The highest levels were found in animals from the highlands of southern Sweden. They represented average values of 220 mg/kg and maximal values as high as 970 mg/kg. The coastal areas came second with an average level of 190 and the farmland of southern Sweden with 110 mg/kg.

Northern Svealand and Norrland represented the best material levels. The average level there was 52 mg/kg (but the maximal value was 170).

PCB has been proven to cause disturbances of the reproductive mechanisms. Scientific experiments with the closely related mink show that damages begin to occur when the levels are above 50 mg/kg.

The scientists are aware of the fact that experiments made with one animal species cannot be transferred to another animal species, but the mink and the otter are closely related and there are large margins.

It was recently reported in SVENSKA DAGBLADET that the levels of PCB of the environment seem to be on the decline as a result of international and national prohibitions.

Will There Be Enough Time?

It is not certain that there is enough time for the otters to survive in southern Sweden, where the PCB levels are highest and where the species has become most drastically reduced. Further north the situation is more promising.

The breeding of otters at a facility at Boda Bruk in Halsingland by the Swedish Sportsmen's Association and the World Wildlife Fund has to be seen as a precaution for the future. This facility will be able to provide stocking material if necessary.

9662

CSO: 5000/2030

OVER-FERTILIZING SEEN AS THREAT TO WATERS OFF WEST COAST

Stockholm SVENSKA DAGBLADET in Swedish 23 Nov 81 p 6

[Article by Henrik Ekman]

[Text] "This is the worst environmental threat ever to the West Coast." This statement was made by marine biologist Rutger Rosenberg, speaking of the excessive enrichment of the sea that is causing oxygen depletion and the death of marine life.

Last summer there were alarming reports about large amounts of fish dying between Stromstad and Oslo. Since then the picture has become even grimmer.

At today's meeting of the Environmental Advisory Committee, the Minister of Agriculture, Anders Dahlgren, will receive a report about the work that is being done by the National Environmental Protection Board in order to solve this problem.

Rutger Rosenberg, who is working at the Kristineberg Marine Biology Station in Bohuslan, is one of the scientists of the National Environmental Protection Board. The things he is able to say are not encouraging.

Dead Sea Floors

"The sea is becoming excessively enriched. Recent reports from Western Germany show that the entire North Sea is now affected. Large areas of oxygen-depleted, dead sea floor have been discovered. The threat against the environment is far more extensive than we used to believe."

The widespread death of fish off the West Coast during August-September was due to huge amounts of plankton that came flowing with the streams from the British side of the North Sea. Among the plankton were toxic algae that made cod, eel and even cultivated clams die in large numbers.

The problems of the sea off the West Coast are by no means limited to the shallow Laholm Bay of southern Halland, although that has been the focus of attention. In the beginning of the seventies, there were some signs indicating that everything was not all right. Immense algal blooms destroyed both fishing and seashore recreation.

The situation was equally bad at Skalderviken on the other side of the Peninsula of Bjare. Skalderviken is also shallow and surrounded by farmland.

The same thing applies largely to the coasts of Denmark. Valfried Paulsson, director of the National Environmental Protection Board, has been in touch with his Danish colleague and he will bring up the matter at the Oresund Commission.

Fertilizing Suspected

The big controversial issue is the role of fertilization in farming. Minister of Agriculture Anders Dahlgren is not convinced that this is so significant. But his opinion is that if it is significant, one has to be prepared to cut down on the spreading of artificial fertilizers.

In the special group that has been formed in Halland with representatives for the different interests, the discussions of this matter have been more than harsh. The farmers are not willing to agree that their nitrogen and phosphorus would cause the algal blooms of the sea.

"But the scientists are quite unanimous about the farm fertilizers' being an important factor," says Rutger Rosenberg.

"Without all the nutrition coming from farming the Laholm Bay incidence, for example, would probably never have occurred. Swedish farming has increased the use of nitrogen fertilizers to double the amount since World War II and of the total amount that is spread out only 60 percent is absorbed by the plants. Ten to 20 percent ends up in the sea."

Big Money

The big problem is, of course, that so much money is involved. The dominating opinions among farmers now are that it would be better to increase the amounts of fertilizers in order to even out the variations in the harvests.

It is not unusual that suspicions are to such a large extent directed toward farming. As Rutger Rosenberg mentioned, the amounts that are spread out on the fields have increased substantially. Society has at the same time made great progress in the purification of discharges from households and industries.

Such local discharges have been easier to handle. The diffuse pollution from the fields is more difficult to take care of. It is not covered by the Environmental Protection Act either. The runoffs are therefore not tested, and neither is there any uniform program for their monitoring.

Action Proposed by Rosenberg

Rutger Rosenberg will propose the following measures to the minister of agriculture:

--Increased investment in marine research, and above all more interdisciplinary research so that zoologists, botanists and oceanographers are not isolated from each other while doing their work.

--More basic research. "It has been popular for several years to invest in individual issues in an attempt to solve them. Therefore we actually know quite little about what is taking place on the sea floors at this time. That is a little embarrassing...."

--Intense investigations of the runoffs of plant nutrients from land and the addition from air.

--Measures within agriculture.

The last point will be the hardest one to meet. But the following was said by Hans Berggren of the environmental protection unit of the county council in Kristianstad to SVENSKA DAGBLADET during the serious alarm of the summer:

"We have to adjust the farming in accordance to environmental conditions--just like any other production! In regions where the water systems become excessively enriched, the amount of fertilizer has to be cut down. Talking about such things is taboo. Unfortunately. But you can rest assured that it will be coming up during the 1980's!"

9662

CSO: 5000/2030

SWEDEN

GOVERNMENT FORCED TO DRAFT TOUGHER PESTICIDE USE LAW

Stockholm DAGENS NYHETER in Swedish 11 Dec 81 p 4

[Article: "Social Democratic Proposal for New Law Successful"]

[Text] The government's proposal on the use of pesticides in forestry was rebuffed by parliament on Thursday. The government was assigned the task of working out a new proposal as soon as possible that would give the municipal governments the decisive influence over the use of pesticides to prevent the spread of deciduous growth.

The Social Democrats' proposal defeated that of the government by 149 votes to 86 with 63 abstaining. The Conservative Party members abstained, thus contributing to the government's defeat.

But Agriculture Minister Anders Dahlgren (Center Party) made clear in the debate that the government will not present a proposal with the contents prescribed by the parliamentary decision.

"The government cannot be forced to draft proposals that it cannot support. For this reason, the government will simply recommend at the spring session of parliament that the present temporary ban on pesticides be extended."

The idea of the parliamentary decision is that a new proposal should be presented to parliament. It should recommend extending the temporary ban on the chemical control of deciduous growth until 1 July 1983.

During this time the municipal governments should develop plans for areas that would be totally exempt from the use of chemicals. The plans would be ratified by the municipal council and could not be appealed.

In general, the use of pesticides would be prohibited in the remaining forest regions. The Forestry Board could grant dispensation from this ban if it were needed to secure the regrowth of forests and if mechanical clearing were impossible.

But Dahlgren's statement means that no such proposal will be forthcoming before the elections next year.

Ake Victorsson (Social Democrat) maintained that the government was acting against the principles of parliamentary government. He stated that the Social Democrats would take up the matter from a constitutional standpoint--if the government did not choose to resign instead.

Not the Loser

"I am not the loser here--forestry is the loser. As you make your bed, so you must lie on it," Anders Dahlgren (Center Party) said, concluding his speech. He regretted that the Conservative Party members had chosen to abstain during the final vote, thereby preparing the way for the Social Democrats' proposal.

Conservative Party spokesman Arne Andersson called on the agriculture minister to stop complaining. He stressed that the Conservative Party acted totally according to the rules of the game. The responsibility for securing support for the government lies completely with the agriculture minister, who chose to present a proposal that lacked the support of parliament.

"It is of no importance to the Swedish forestry industry whether the Social Democrats or the government wins the vote today. Both proposals have other interests in mind than the good of the forestry industry," Arne Andersson said.

Want Ban

Both the Social Democrats and the government want a ban on the use of pesticides to combat the spread of deciduous growth. They differed on the regulations, however. The Conservative Party wants to make it possible for the forestry industry to use pesticides in a controlled manner.

Arne Andersson stressed that the conservatives could support neither the Social Democrats, who formed a majority in the agriculture committee, nor the reservation of the middle parties. The Conservative Party members of parliament found no other solution than to abstain during the final vote.

The parliamentary debate on the use of pesticides, a hot issue during the 1979 election campaign, dealt primarily with the Social Democrats' demand that the municipal governments be given the decisive influence.

The remaining parties sharply criticized the Social Democratic proposal during the debate and accused the Social Democrats of creating uncertainty.

The agriculture minister stated that the Social Democrats proposal paved the way for arbitrary decisions.

ONE OF LAST STANDS OF VIRGIN FOREST TO BE CLEARED

Stockholm DAGENS NYHETER in Swedish 17 Dec 81 p 5

[Article by Soren Lofvenhaft]

[Text] Norrland virgin forests that have stood untouched for centuries close to the mountains may now be cut down!

This week parliament decided to appropriate 400 million kronor in preliminary work for cutting in the virgin forest area from which wood has not been taken in the past.

The lumbering has caused a hard conflict between environmentalists and Lapps on the one hand and the Crown Forests Agency on the other.

The thousand-year-old conifer forest that has been the home of such birds as owls and eagles will be chopped down--a shortage of wood is leading to the sacrifice of the last outposts in the forest that can never be replaced.

That charge is made by environmentalists who took the initiative in Jokkmokk to oppose the Crown Forests Agency.

"The criticism is very exaggerated," said the general director of the Crown Forests Board, Lennart Schotte. "Since we drew the limit in the 1950's on how far up in the Norrland interior lumbering could be done our technical and biological knowledge has increased. Today we can cut wood in the mountains without destroying nature."

Quiet Conflict

The conflict over the ancient forests near the mountains has been carried on quietly so far. But after the Crown Forests Agency declared that 70-75,000 hectares of forest bordering the mountains north of Dalarna would be cut--and the state recently approved 400 million kronor in start-up subsidies, primarily for building roads to the mountains--the Swedish Environmental Protection Society's local divisions have stepped up their activity.



Some 73,000 hectares of the evergreen forest belt between the mountains and the lowlands north of Dalarna will be transferred to "normal forest usage" now that the limits on where timber can be cut have been lifted.

"We think the decision was made too lightly. Other interests besides those of the Crown Forests Agency must enter in due to the fact that irreplaceable natural resources are involved. We are not opposed to lumbering in principle but if one goes in and cuts down the old virgin forest one should know what one is doing."

So said Tomas Oberg, a teacher of ecology and SNF [Swedish Environmental Protection Society] member in Jokkmokk.

Another member, well-known nature photographer Edvin Nilsson, is hard at work just now on a TV film on the mountain forests which he hopes will arouse public opinion so that the lumbering can be stopped.

"We understand that there is a shortage of wood and that the Crown Forests Agency is looking for new areas, but the price for the raw material will be much too high if the old virgin forest disappears," he said. "I have lived in these forests and know what is involved. Trees, animals and plants that are only found here will be wiped out. They can't survive in new planting areas. The hereditary character of the local region will be destroyed where the machines advance."

Life or Death

The Lapps are lining up wholeheartedly and unequivocally in the struggle for the border forests between the mountains and the lowlands which act as a buffer zone for the reindeer. Here the reindeer find winter and spring pasture as well as protection from bad weather.

"I am not exaggerating when I say it is a matter of life or death for the reindeer industry," said Apmut Ivar Kuolijok in Jokkmokk. "The cutting limits should not be lifted. The natural winter forage would disappear, both the reindeer moss on the ground and the hanging moss on the old trees. We Lapps are the ones who alerted the environmentalists and now we hope that we and they together can stop the lumbering."

Professor Ingmar Ahlen at the Agricultural University in Uppsala claimed in his book, "Fauna Resources," that at least 1 percent of the virgin forest must be saved in order not to break the historical continuity in the thousand-year-old forests.

"Otherwise species will die out, there are animals and plants that cannot live in cultivated forests but only in natural forests. If we destroy old virgin forests we will lose natural types we will never get back," he said.

Professor Ahlen said it is important to find out about these consequences before lumbering begins.

"There are certainly some forests near the mountains that could be taken but one must carefully study each area before the chain saws are started up," he said.

Doubtful

The head of the Crown Forests Agency, Lennart Schotte, feels that the criticism lacks an overall view.

"We know where we can renew forests and this is not a spur of the moment project we are starting on," he said. "We like all forest owners must follow the Forest Conservation Act which says we are responsible for carrying out forestry work where it can be done. In the past this could not be done in the mountains but developments have advanced. And don't forget that there is a very big need for timber just now. And the environmentalists should be aware that we are not planning to risk any irreplaceable natural resources."

SNF charges that the economic aspect of the investment is very doubtful. The costs of lumbering would be so high that profits would be insignificant.

"When one sees how they lift timber by helicopter from mountain slopes, one must question the economic thinking," said SNF.

6578

CSO: 5000/2037

BOARD APPROVES GENERAL BAN ON ASBESTOS USE

Stockholm DAGENS NYHETER in Swedish 18 Dec 81 p 42

[Text] There will be a general ban on all use of asbestos in Sweden. In order to use asbestos a special permit from the Industrial Safety Board is required. Asbestos in the brake linings of passenger cars could be eliminated entirely by 1984/85.

That is the substance of a decision made by the Industrial Safety Board on Thursday, the TT news agency has learned. The decision will be confirmed in January. At that time all the application provisions for asbestos will be ready. The idea is that the new regulations will go into effect at the earliest on 1 July of next year.

The Industrial Safety Board's decision is very important not only for job environment but for the entire outdoor environment as well since the asbestos ban will apply to all passenger cars.

The principle is that all use of asbestos will be prohibited. In those cases where asbestos cannot be replaced by another material its use will be given special permission by the Industrial Safety Board.

If the ban goes into effect on 1 July 1982 asbestos brake linings must be replaced the next time a change is made.

Since a brake lining lasts around 4000 miles and the average motorist drives 2000 miles a year all brake linings should be replaced with asbestos-free linings at some point in 1984/85.

The Swedish auto industry has already announced that asbestos-free brake linings will be used in new production starting next year.

The problem is to find asbestos-free brake linings for heavier vehicles. In this area it could take quite a long time. But manufacturers of trucks and vans have also said that these brake linings can be free of asbestos.

Asbestos-free brake linings for trains, subway cars and trolley cars are also being tested and when they come on the market they will be used when the old asbestos linings wear out.

Motorists have nothing to lose from asbestos-free brake linings on their cars since the new type without asbestos will last 50 percent longer in terms of distance driven.

The Industrial Safety Board's decision means that both the outdoor environment--especially in urban areas with lots of traffic--and job sites will become practically free of asbestos.

6578

CSO: 5000/2037

CLEAN-UP OF HAZARDOUS CHEMICAL DUMP TO TAKE YEARS

Stockholm DAGENS NYHETER in Swedish 16 Dec 81 p 12

[Article by Bo Engzell]

[Text] Teckomatorp, 15 Dec--The people of Teckomatorp will not be rid of the aftereffects of BT Chemicals for several years. In some places the clean-up will take longer than previously anticipated, according to the county board's environmental unit in Malmö. Not until next summer will all the stored poison be removed and shipped abroad.

After that it will probably take another 4 years before the ground at the old factory area where the factory itself was destroyed and the surrounding area is entirely free of poison. The entire clean-up of the scandal-ridden factory, including legal measures, will cost taxpayers an estimated 50 million kronor.

SAKAB [expansion unknown] has begun to remove the poisonous chemicals but it is the county board that must see that the poison is repacked before being sent off. Many of the poison barrels are so rusty that they must be replaced with new containers.

It is with regard to the repacking of 400 barrels with the most concentrated poison residues that Teckomatorp residents will once more be confronted with the "old BT Chemicals."

There will once more be an unpleasant smell from the factory area when the repacking is done, the county board warned community residents. This is unavoidable. Work in that area is expected to start in February or March of next year. Then it will be possible to send the poison abroad where it will be destroyed.

Dirt Removed

Right now they are removing lightly-polluted dirt and 250 cubic meters of other waste in fluid form.

These shipments too are going abroad.

Another 15 cubic meters of finished products from the chemical factory must also be removed. They are in 25-liter packages. Around 3000 rusty metal barrels, now empty, will be compressed before they are dealt with.

The county board hopes that all the poison waste will be out of Teckomatorp by 1 July 1982. This part of the clean-up will take that long.

But then cleansing the ground in the factory area and the area near the factory where the poison was buried will still remain. It was believed from the start that this soil cleansing would take 5 to 6 years. Then the ground would be clean enough that the leaching process could be discontinued. Three of those years have elapsed. Now it is clear that even more time will be needed.

Water Free of Poison in 4 Years

That means that the last traces of BT Chemicals won't be gone even 4 years from now. But they hope that by then drainage water will be free of poison. Then at last they can breach a wall built in the direction of Braan and the water can pass into the brook.

But that won't happen until very careful tests have been made. The authorities aren't taking any risks. Of course the delayed clean-up of BT Chemicals will cost money but that can't be helped. The final phase is the most important one. BT Chemicals has cost Sweden enormous sums. The clean-up will be carried out without taking any chances at the very end. Even if society has to pay a little more.

6578

CSO: 5000/2037

SWEDEN

BRIEFS

EXTENDED CROP DUSTING BAN-- The ban on chemical extermination of the leaf pest has been extended. No time limit has been established. This means that the forest industry may have to wait at least 2 years for a new law on leaf pest extermination. "At the beginning of January, I will present a bill to extend the existing ban on chemical extermination of the leaf pests. I will then proposed that the ban is to be in effect for the time being," says Agriculture Minister Anders Dahlgren (Center Party). [Text] [Stockholm DAGENS NYHETER in Swedish 21 Dec 81 p 5/11949

CSO: 5000/2041

POLLUTION REPORTEDLY TURNING MARMARA INTO 'DEAD SEA'

Istanbul MILLIYET in Turkish 26 Oct 81 p 2

[Article by Prof Dr Kemal Ozan, dean, Istanbul University Veterinary Faculty]

[Text] The plant and animal potential of the seas is of tremendous importance in our time from the standpoint of feeding a steadily and rapidly growing population. In addition to the food potential they represent, the seas are also a natural repository of the energy and minerals needed for industry.

Exploitation of the seas in Turkey is primarily in the form of harvesting marine products. While the harvest of marine products, having about a .4 percent share of national income, increases every year worldwide, it has, on the contrary, declined in our country. Although the average fish harvest is 5 kilograms per capita annually, 80 percent of this is consumed in the harvest area; 60 percent of the population is unable to get even 1 kilo of fish to eat a year.

Ocean fish comprise, on average, 93 percent-94 percent of the annual marine product harvest and fresh-water fish, mollusks and crustaceans, fish roe, sponges, turtles and dolphin comprise 6 percent-7 percent.

The largest portion of the nearly 200,000 tons of marine products harvested annually is taken from the Black Sea and the Marmara. Of the salt-water fish harvest, 76 percent comes from the Black Sea and about 20 percent from the Marmara. The major portion of other marine products -- 60 percent -- is harvested in the Marmara region.

Cancer of Pollution

Important as it is in the harvest of marine products, the Sea of Marmara and the surrounding area are at the same time a place where 60 percent of all organized industry is located and 55 percent of the workforce engaged in industry and all its aspects lives and works.

This semi-enclosed sea of ours, covering an area in our country of 11,352 square kilometers, unfortunately, is succumbing to the cancer of pollution and is almost a dead sea. Its waters, transitted by 10 percent of the Mediterranean oil traffic via the Straits, are polluted by the wastes of tankers carrying 210 million tons of petroleum annually.

After the tankers discharge the extremely sticky petroleum, about 20 percent of it remains in their tanks. The tanks are filled with water to provide ballast en route to reload and this mixture of oil and water is then usually discharged into the sea. Owing to inadequate measures and the failure to provide oversight, our national seas, the Marmara in particular, are the best place for tankers to clean their tanks.

As a result of the discharge into our seas of oil-contaminated water by tankers, the shores of Kilyos, Sile, the Gulf of Izmit, the Straits and the Mediterranean are covered by a foul layer of petroleum and petroleum byproducts.

One ton of oil dumped in the sea spreads to cover 1,200 hectares with oil pollution. It takes 2 to 3 months for the cover of oil pollution to disperse in the sea.

The greatest hazard of oil pollution is that it starves the sea of oxygen. The oxygen content of 1 liter of seawater in some areas of the Marmara has fallen as low as 4 milligrams. Deprived of oxygen, fish desert the oil-polluted waters and do not return. Oil pollution, for this reason, is an important pollution problem leading to the death of marine life.

Industrial Waste

Among the other factors causing pollution of the Sea of Marmara, the location of industry on the shores also rates high as a source of pollution. In overall pollution of the sea, land-based wastes account for 80 percent, 60 percent of which is industrial waste and 31 percent [as published] urban wastes. It is agreed that the most important components in the pollution of the seas are factory wastes, the chemical fertilizers used in modern agriculture, pesticides, home wastes, detergents and the gases, fluids and solid wastes discharged by industry.

Wastes dumped into the sea by the big cities lining the shores amount to around 200 tons a kilometer each year.

The southern contour of the Marmara from Haydarpaşa to Izmit, from there to Golcuk, Yalova and Cınarcık and from Gemlik to Canakkale, as well as the northern contour, are marked by ravaged shores and smothered by unplanned development.

Unplanned urban growth has allowed productive agricultural lands to be used for industrialization and residential areas. Industry, together with its wrong choice of location in some places and the wastes it leaves in the soil and the water, causes pollution. Countless examples of both soil pollution and the pollution of interior waters and the sea created by industry are seen along the Istanbul-Izmit and the Izmit-Bursa corridors.

Foul odors rise and the sea changes color at Gemlik because of the nitrogen, various chemical and petroleum product, synthetic fabric, detergent and canning factories and their wastes. The situation is even more serious at the Gulf of Izmit, where 80 percent of the factories have no waste treatment facilities and, even if they do, they are inadequate. They dump their toxic wastes into the sea by way of the sewers or streams and waterways which empty into the sea. And, unfortunately, public establishments are also among the factories whose wastes empty into the sea.

"Deadly Metal"

Mercury, the "deadly metal," is one of the most dangerous poisons dumped into the sea with factory wastes. Mussels in some areas of the Marmara have been found to contain almost .34 milligrams of mercury per kilogram. Yet according to the WHO, mercury in foods for human consumption cannot exceed .05 milligram to the kilogram. Analyses of fish caught in the Black Sea such as mackerel, swordfish and mullet, for instance, show that a large portion of them is contaminated by mercury at levels higher than 1.2 milligrams to the kilogram. Fish caught along the western shores of the Mediterranean reportedly have been found to contain up to 4 milligrams of mercury to the kilogram.

When Mercury-contaminated fish are eaten, the mercury ingested accumulates in the organs of the body. The most important organs in which mercury accumulates are the brain, nerve cells and liver. Therefore, when the amount of mercury ingested reaches a dangerous level, it leads to the appearance in humans of nervous diseases, strokes, deafness, blindness, mental disorders, violent digestive upsets and birth defects.

In speaking of pollution of the seas by run-off from the land, one must concentrate on chemicals and pesticides used in modern agriculture. These substances enter the sea through rain run-off and the waterways from the factories which produce them or the agricultural districts where they are used, contaminating and killing marine organisms. Pesticide residues accumulate in the flesh and oils of fish, causing serious health problems when consumed.

Fish caught in Turkey's seas contain such pesticide residues. According to analyses, toxic residues found are .7 mg/kg in tuna, .3 mg/kg in turbot and .4 mg/kg in anchovies. Toxic residues at this level affect human health through consumption of the fish and may lead to the appearance of serious diseases from liver and nervous system disorders to cancer.

Pollution of the seas in this way is not only harmful to public health, but also has negative effects on tourism. Usually in putting up a structure or place of business near the shore, it is necessary to determine whether the benefits to be derived are greater than the tourist potential of the area. Especially if factories built on the shores lack treatment facilities, the area will be rapidly polluted. The socio-economic impact of tourism, use of the beaches, water sports, camping and fishing ceases to exist in such areas. When a factory is built on the shore, it is therefore necessary that studies of environmental health be thorough and the necessary measures taken. Otherwise, it will usually be more harmful than beneficial as that area will be deprived of tourist income and the harvest of marine products.

After the Gulf of Izmit and the Golden Horn in Istanbul, as the result of improper planning, the Bandirma shoreline is also being seriously polluted by the wastes of acid and fertilizer factories to the extent that pollution arising from the addition to factory wastes of the termination of sewers at sea has made it necessary to ban consumption of marine products in this area.

For Tomorrow

In summary, there is a theory that life initially began in the sea. And it is the seas that will determine whether this life is sustained. The plant and animal potential of the seas is stressed as the only savior of mankind at some near point in the future vis-a-vis the ability to feed a growing population and the likelihood of threatened famine. The seas are also becoming increasingly controversial as a source of the world's limited mineral and energy resources.

It is seen that despite all their riches, our seas, such as the Marmara with the highest production of marine products in Turkey, and their shores are not adequately appreciated and are succumbing to steadily increasing pollution as the result of poor utilization.

As long as no measures are taken and pollution continues at this rate, the death of our seas one after the other and the loss of their products and tourist potential may one day be unavoidable. This sad end can be averted only by finding and applying the necessary solutions.

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